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Excavations at 38RD158: A Multicomponent Prehistoric Site in Richland County, South Carolina

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EXCAVATIONS AT 38RD158: A MULTICOMPONENT PREHISTORIC SITE IN RICHLAND COUNTY, SOUTH CAROLINA

by

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INTRODUCTION

Background to the 38RD158 Excavations

From October 6 to November 6, 1978, archeological investigations were conducted at 38RD158, a prehistoric site in the right-of-way of the Columbia Industrial Park 230KV Transmission Tap Line in Richland County, South Carolina. This research was funded by the South Carolina Electric and Gas Company in order to mitigate the loss of archeological resources due to the planned construction of a transmission line angle tower on a portion of the site.

The existence of 38RD158, located in the upper Coastal Plain just below the Fall Line, has been known for some time. James L. Michie (personal communications) reported that "artifact collectors" have been surface collecting the site during periods of cultivation for at least twenty years. During the 1970's various members of the Institute staff visited the site on a number of occasions. However, it was not until May, 1977, that the site was formally surveyed as part of an overall reconnaissance survey of the proposed Columbia Industrial Park Tap Line right-of-way (Smith 1978).

Smith noted that 38RD158 is characterized by a nearly continuous distribution of artifacts over an area of more than 20 acres, as defined by recent cultivation. Within this area, however, it was observed that the proposed turning-tower location represented an area of particularly high artifact density.

An analysis of artifacts recovered from 38RD158 through surface collections and subsurface testing indicated that prehistoric utilization of the site occurred during the Middle Archaic, Late Archaic and Woodland periods, ranging in time from ca. 5000 B.C. to A.D. 750 (Smith 1978). Further, based on the artifact assemblages and the environmental setting of the site, Smith hypothesized that 38RD158 represents a habitation site of considerable permanence during Woodland, and possibly earlier times.

Over the past decades 38RD158 has been heavily disturbed by intensive cultivation and by the removal of a portion of the site immediately north of the proposed turning-tower location for fill dirt. In spite of this disturbance, Smith (1978) maintained that the site had considerable potential for providing data relevant to variability in the prehistoric utilization of a given site over a relatively long temporal span. Consequently, in the event that the proposed turning-tower could not be relocated, Smith recommended that at least one contiguous area of moderate size be excavated at the locus to be destroyed by setting the tower's foundation. This would enable us to study artifact distributions on a small scale. Smith also recommended that a smaller fraction of other areas within the immediate vicinity of the proposed tower be sampled in order to examine intra-site patterning on a larger scale.

The Excavations at 38RD158

The Columbia Industrial Park Transmission Line archeological survey report recommending mitigation stage excavation of 38RD158, in the event the proposed angle tower could not be relocated, was submitted to the South Carolina Electric and Gas Company in February, 1978 (Smith 1978). It was decided by S.C.E.&G. that it would not be cost-effective to relocate the tower. Consequently, upon request from S.C.E.&G. a mitigation stage proposal was submitted in September, 1978. Although the proposal, and subsequent fieldwork, was largely in line with Smith's (1978) recommendations, some alterations were necessitated by our research goals and by the existing field conditions and project constraints.

In September, 1978, the locus of proposed tower construction and the immediately surrounding area was cleared by S.C.E.&G. personnel. With a crew consisting of the writer and James D. Scurry, fieldwork began with the gridding of the site on October 6 and 9, at which time the boundaries of the area to be investigated were defined.

Excavation began on October 11. The Stage I block excavation (See Section IV) was completed on October 31 and Stage II subsurface testing began immediately.

Fieldwork at 38RD158 was completed on November 6, 1978. Subsequent analysis of the data and writing of this report continued through February, 1979.

Research Goals and Strategy

Introduction

Prehistoric Indians are known to have inhabited the Upper Coastal Plain for some 12,000 years. Coe's (1964) excavations at stratified sites in North Carolina provide a sequence of projectile point types useful for distinguishing gross temporal divisions in prehistoric assemblages in the South Carolina Upper Coastal Plain. Similarly, a preliminary framework for interpreting ceramic period remains is provided by the work of Caldwell (1950) in North Georgia and Keel (1976) and Dickens (1976) in the North Carolina mountains. However, most of this previous research has emphasized problems of culture history and chronology rather than whole regions. Consequently, the settlement patterning and cultural geography of past cultural systems has been largely ignored. In this respect, the Upper Coastal Plain in the vicinity of Columbia is no exception. The importance of regional level research, and the potential of intensive single site studies toward this aim, will be discussed in this section.

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38RD 158

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Prehistoric Site Research in the Vicinity of 38RD158

Archeologically, the general vicinity of 38RD158 is one of the better known regions of the state. However, for many years the opposite bank (west) and floodplain of the Congaree River have been most intensively studied (Wauchope 1939; Griffin 1945). More recently, members of the Institute of Archeology and Anthropology of the University of South Carolina and the Archeological Society of South Carolina have been active in nearby archeological work, including excavations at the Thom's Creek (38LX2), Taylor (38LX1) and Manning (38LX50) sites (Michie 1969, 1970). Under the direction of Dr. Donald R. Sutherland, the University of South Carolina conducted its field school at the Thom's Creek site (Trinkley 1974).

Due to South Carolina Highway Department proposals for a major highway project, Columbia's Southeastern Beltway, the Institute of Archeology and Anthropology has conducted several surveys in the general area (Anderson, Michie and Trinkley 1974; Anderson 1974; Goodyear 1975; Wogaman, House and Goodyear 1976). Three additional surveys have been conducted in the vicinity of Cayce (Ackerly 1976; Smith 1977; Garrow, Cocker, and Warner 1977). The S.C.E.&G. Powerline survey by Smith (1977) resulted in the subsequent testing of 38LX135 (Michie 1979). At the Manning site, additional stratigraphic testing and controlled surface collections have been intermittently conducted by the Institute, the University of South Carolina Anthropology Department and the Archeological Society of South Carolina from 1975 through 1978. This work, however, has not been fully reported (Wogaman, House and Goodyear 1976:21-22; Goodyear, Michie and Lee 1978).

The above research indicates that there is considerable variability in the prehistoric sites in the general vicinity of 38RD158. This variability includes site size, density of archeological material, environment setting, and temporal components represented. However, several of these sites appear to be generally similar to 38RD158 in that they are: (1) relatively large; (2) contain relatively high densities of archeological material; (3) occur on fairly high ground, often along a terrace edge; and (4) seem to have been most intensively utilized during the Archaic and Woodland periods. Unfortunately, it is presently difficult to place 38RD158 into a broader regional context because we know virtually nothing about archeological site variability on the east side of the Congaree River. Only the archeological surveys of Anderson (1974) and Goodyear (1975) have been in the vicinity of 38RD158 on the east side of the Congaree.

Single Site Excavations in Regional Research

It is assumed that prehistoric societies existed and functioned on a regional level that involved the systemic integration of diverse localized articulations with the environment (cf. Binford 1964). The assumption of systemic people-land relationships emphasizes the dynamic interaction between humans and the differentially distributed biotic and abiotic resources in the environment (House and Wogaman 1978). Accordingly, site location is identified with respect to local environment as a major category of data relevant to examining the cultural ecology of a prehistoric society

(Winters 1969; Jarman, Vita-Finzi and Higgs 1972). Therefore, sites formed by a single past society would be expected to exhibit functionally-derived intersite variability (Binford and Binford 1966; Struever 1971). It should be apparent from this discussion that a "total" understanding of past behavioral systems cannot be derived from an examination of one or even a few sites.

House and Wogaman (1978) discuss the crucial role of intensive single-site studies in testing regional models and hypotheses of past culture ecology. However, rigorously formulated models of this type have yet to be developed for the Fall Line-Upper Coastal Plain of South Carolina. Nevertheless, archeological survey in conjunction with the excavation of a number of functionally diverse sites of a single past society should, through an attempt to collect comparable and behaviorally meaningful data, enable us to construct regional models in the future. Intensive single-site studies may be useful for model construction in at least two major ways. First, they provide a means for understanding the archeological record on both the artifact and intrasite structure level. This is necessary in order to establish concrete epistemological links between relevant variables of human behavior (i.e. as specified by anthropological theory) and presently observable archeological variables at either the site or regional level (Schiffer 1976). Second, intensive single site studies are necessary in order to determine the degree to which various survey techniques can provide data adequate for estimating the content of the archeological record on a single site or regional level (House and Wogaman 1978). This relates directly to the problem of sampling archeological remains in such a way that the resulting units of analysis are behaviorally meaningful (Reid, Schiffer, Neff 1975).

Overview of the 38RD158 Research

Smith's (1978) recommendations for mitigation had at least two advantages. First, the data recovered would allow a more precise determination of site potential and significance. In turn, this would make possible recommendations for a long-term management plan. Second, small-scale excavation accompanied by additional limited testing would provide data for scientific study should unexpected destruction of larger areas of the site occur.

From a research perspective, the research at 38RD158 may be broadly divided into long-term and short-term goals. The long-term research goal is to provide a body of archeological data from 38RD158 which, in conjunction with archeological and environmental data obtained through other single-site excavations and surveys, will enable us to develop and test sound regional models for this area in the future.

In order to achieve this long-term goal, however, it is necessary to structure short-term research with the long-term goal in mind. In terms of 38RD158, this can begin through concentrating our single-site efforts toward an understanding of the archeological record at the artifact and intrasite structure (reflected by the spatial distribution of various artifact assemblages, features, etc.) levels. This, in turn, will enable us to address two major research questions: first, it will enable us to infer the range of prehistoric behavioral activities that occurred at a portion of the site, as reflected by the data recovered; second, it will enable us to make tentative inferences regarding the site's function(s) within a broader regional perspective.

Based on Smith (1978), it was felt that 38RD158 would have considerable potential for providing data relevant to these basic research questions. Indications were that the archeological deposits at 38RD158 may be at least partially undisturbed. Under these conditions, the discovery of artifacts in their original places of deposition would be possible. Further, given the assumed permanence of occupation of the site during certain periods of prehistory, there was the possibility of discovering features representing prehistoric fire hearths, storage pits, and possibly house remains. Consequently, it was felt that 38RD158 could provide data that would help interpret it, and ultimately other, less well preserved sites in the area. This is especially critical on the last side of the Congaree River in the vicinity of the Fall Line where a number of archeological sites are known, but the opportunity for even limited excavation is no longer present or has not been present to date.

The sampling strategy operationalized by the 38RD158 excavations is basically that outlined in the section entitled "Recommendations" in Smith (1978). It was felt that the excavation of a relatively large area at the locus of the proposed tower construction would have a high probability of locating archeological features if they exist. It would also allow for an intensive look at relatively large-scale archeological patterning in the form of various artifact distributions, from which we may infer behavioral activities responsible for the patterning.

By contrast, additional subsurface testing beyond, but within the immediate vicinity of the proposed tower location, would enable us to examine, though not in detail, internal site variability over a larger area of the site. Based on the differential densities of various artifacts over the site as reported by Smith, it seemed reasonable to assume that such variability should be present. It was during this phase, hopefully, that evidence of different occupations and/or different activities at the site could be spatially separated. It was recognized, of course, that there would likely be considerable spatial overlap. This would result from different occupations and from the occurrence of different activities being performed "simultaneously" at the same spatial locus. Nevertheless, at least some spatial segregation should be possible. This can be accomplished through examining the spatial distribution of various artifact assemblages that can be reasonably attributed to specific temporal periods and activities.

Organization of this Report

The relevance of the location of 38RD158 in terms of the environmental diversity within the South Carolina Upper Coastal Plain will be briefly discussed in the next section. The excavation data will be presented in sections describing the archeological site at 38RD158 and the sampling design and data recovery techniques employed in these excavations. Section V will pertain specifically to the archeological data generated by the 1978 excavations at 38RD158.

The archeological data is derived from artifactual variables that refer to the contents of the site described in terms of multiple typologies (artifact categories) of discrete artifacts. These archeological variables will be defined and justified as a means of indirect observation of relevant variables of human behavior in past systemic context (cf. Fritz 1972; Schiffer 1976). Chronology, technology and function are the dimensions of behavioral variability of interest. This multi-dimensional approach will enable us to address the two major research questions presented earlier, and, provide a body of single site data that may be utilized in future research. Quantification of the variables for each artifact category considered will be presented in Appendix A.

Temporal period-artifact category correlations will be presented in Section VI. In Section VII this data will be utilized to examine temporal variability in the spatial patterning (See Appendix B) of various artifact categories at 38RD158. It will be assumed that the prehistoric artifacts at 38RD158 entered the archeological record as primary rather than secondary refuse, having been discarded more-or-less at the location where they ceased to be useful in some on-going activity (Schiffer 1976). It is further assumed that the spatial association of various artifact categories directly reflects the behavioral activities that produced the patterning. Variability in patterning over the site, in turn, should be indicative of site function(s) (Goodyear 1975).

In the final section of this report, the archeological data from 38RD158 will be articulated in order to address the two major research questions. Through inter-relating the archeological data, by examining chronology, technology, function and the spatial patterning of various artifact categories, it should be possible to reasonably infer for each temporal component the range of prehistoric behavioral activities that occurred at that portion of the site examined, and, the site's function (s) within a broader regional perspective. In light of the archeological data recovered from 38RD158, site significance and recommendations for the long-term management of the site will be briefly considered.

ENVIRONMENT AND PREHISTORIC HUMAN ECOLOGY IN THE VICINITY OF 38RD158

Biophysical Environment

The environment in the vicinity of 38RD158 is characterized by a warm, temperate and subhumid climate. In Columbia the temperature averages 46° F. in January and 81° F. in July. During an average year, there is 42 inches of precipitation and a 248 day growing season. Droughts, floods, and windstorms are relatively moderate in frequency and severity (United States Department of Agriculture 1941). Therefore, the climate of the area does not strongly constrain human activities and is quite favorable for agriculture.

Geologically, the area lies just below the Fall Line within the Pleistocene Sunderland formation of the Coastal Plain province. As is typical of the Coastal Plain, the geologic substrate consists of unconsolidated marine sediments in the form of a Pleistocene terrace. The terrace sediments consist largely of sand and gravel, with highly variable grain size (Cooke 1936). Thus, most lithic raw materials suitable for prehistoric toolmaking would have had to be imported to the area.

In physiographic terms, the area is within the river-bottom and terrace division of Richland County, largely represented by a belt, 4 to 6 miles wide, bordering the Congaree River below Columbia. The terraces are situated 10 to 25 feet above the first bottoms, and range from 1 to 1 1/2 miles in width. Since the first bottomland lies only a few feet above normal river level, it is subject to overflow. This lowland division ranges in elevation from 75 to 150 feet above sea level (Van Dieyne, McLendon, and Rice 1918).

The area south of 38RD158 lies in the first bottoms, with the terrain rising to terrace level at the site. Congaree fine sandy loam and Congaree silt loam are the dominant soils in the bottoms. Both soils are brown in color, well to moderately well drained, easily cultivated and productive for modern agriculture. However, they are frequently overflowed by the river. These soils support mixed hardwoods (eg. red gum, cottonwood, white ash, elm, sycamore, hackberry, some few oaks, and red & silver maples) and pines. Local lowlying areas that are frequently under standing water exhibit Congaree silty clay loam or Johnston sandy loam. Such soils are poorly drained and support mixed hardwoods including sweetgum, oak, ash, maple and cypress (Van Dieyne, McLendon, and Rice 1918).

The most important terrace soil in the area is Kalmia sandy loam, described as light to medium gray, well to moderately well drained, moderately productive, and easily cultivated (Van Dieyne, McLendon, and Rice 1918). In the vicinity of 38RD158, the vegetation of stream valley terraces tends toward an oak-hickory forest climax. In local areas, however, a fire subclimax condition with pines dominant is prevalent (Shelford 1963). Thus, during much of prehistory, it seems likely that the general forest structure was characterized by mixed hardwoods in the bottoms and oak-hickory on the terraces. It is unknown to what degree natural and artificial fires locally encouraged pines, grass, and green forbs.

Pine forest fauna include rattlesnake, white-tailed deer, gray fox, fox squirrel, eastern cottontail, gray wolf and mountain lion. Oak-pine forests (post-fire succession), in addition, would include bobcat, eastern chipmunk, gray squirrel, raccoon, white-footed mouse, opossum and black bear. Important animals of the oak-hickory forest included turkey, wolf, bobcat, white-tailed deer, bear, gray and fox squirrel, raccoon, opossum, striped skunk, golden mouse, and cotton mouse (Shelford 1963).

Shelford (1963:59) suggests that, "few mammals appear to have large populations in oak-hickory forests or in pinelands." Thus, resources important to a hunting-gathering economy were probably diverse but diffusely distributed under most circumstances. Consequently, efforts to create favorable habitat and consequent animal concentrations for deer are probable. One such effort would have been firing the forest (Swanton 1946; Lawson 1952). It is also likely that prehistoric populations took advantage of seasonal concentrations of various biotic resources, including deer. This will be discussed later in the section.

Holocene Environmental Change

The above summary of the local environment is applicable for the Late Archaic and later times. Prior to 5000 years ago, however, climatic changes affected the Southeast in ways that are not yet well understood (Bryson and Wendland 1967; Bryson, Barreis and Wendland 1970). There is some evidence that oak-history forests attained their maximum development in the Southeast during the 8000-3000 B.C. interval. After about 3000 B.C., there appears to have been an increase in pine development in this area of the Southeast, especially in the Coastal Plain (Whitehead 1965; Watts 1971). A review of environmental changes in the southeastern United States is presented in House and Ballenger (1976).

Agricultural development of the area began in the middle of the eighteenth century with the first permanent settlements. Since it was necessary to produce all supplies needed on the farm, diversified subsistence farming was practiced on a small scale (Van Dieyne, McLendon, and Rice 1918). This likely resulted with relatively little adverse effect on the environment.

Historic Land Use and Environmental Change

Prior to the Civil War, the best sections of Richland County were included within plantations, where farming operations were conducted on a large scale under wasteful methods. Following the invention of the cotton gin in 1793, a system of cotton monoculture developed. This system can be characterized as labor intensive but land extensive. Large tracts of land were cleared and put under cultivation which, in the short-run, was extremely productive and profitable, but severe erosion and soil exhaustion resulted. When old lands became exhausted, they were abandoned and new lands were cleared and underwent the same process. As a consequence of this system, abandoned fields reverted to forests dominated by pine. Further, eroded topsoil was discharged into nearby river and creek floodplains, resulting in changes in stream hydrology (Van Dieyne, McLendon and Rice 1918; Oliphant 1964; Trimble 1974).

A long period of economic depression followed the Civil War. Agriculture gradually emerged as the leading interest of the county with the development of markets and transportation facilities. Cotton continued in importance along with the development of the turpentine and lumbering industries. These industries retarded the extension of farming by affording a more ready source of income and by absorbing the labor available for farm work. With the decline of these industries, attention was again aimed toward farming and the development of agricultural resources (Van Dieyne, McLendon and Rice 1918).

During the twentieth century, the Great Depression and the boll weevil brought about the decline of cotton and the coincident development of a more diversified agricultural system. In more recent years, urban-industrial development has probably been the single greatest contributor to environmental change.

Prehistoric Utilization of the Biotic Environment

House and Wogaman (1978) constructed a subsistence-settlement model for the Archaic Period in the South Carolina Piedmont, utilizing available archeological ethnohistoric and present-day environmental data compiled by Canouts (1971) for Creek and Pre-Creek Cultural ecology. This data base enabled them to examine aboriginal exploitation of the non-domesticated food resources available in the environment, and, the optimal scheduling and organization of hunter-gatherer economic activity in terms of the seasonal patterning of these resources.

For purposes of the following discussion, it will be assumed that the model is basically sound and that it can be reasonably extended to environmentally similar Fall Line-Upper Coastal Plain areas at a general level. Further, since the model is based largely on ethnohistoric and present-day environmental data, it will be assumed not only that it is generally applicable to the Archaic Period, but also the more recent Woodland Period. In fact, we might expect the model to be more appropriate for the Woodland than the Archaic.

According to the model, the seasonal round would begin with acorn and nut harvests in the early fall, followed by white-tailed deer procurement in upland hardwood zones as these animals concentrated to feed on acorn mast. When the acorn mast became exhausted or the returns from deer hunting diminished, there would be a return to more permanent settlements and hence human population concentrations, along major rivers.

Stored foods would likely be emphasized at the riverine habitation sites during the winter. In the spring, anadromous fish, tubers, shoots and other wild plant foods would be available along the rivers. Fresh-water fish would have constituted an important food resource in the summer and would have been harvested in the rivers on their major tributaries. Wild fruits and berries would be available in areas undergoing early ecological succession and could be obtained from May through September.

It should be emphasized that the above resources were probably not the only ones utilized. However, their seasonal abundance and predictability would allow them to be most efficiently procured. Other resources of possible importance might include fresh-water mussels (summer) and migratory waterfowl (mid to late fall and early spring). These resources would also be available in the rivers and major tributaries. In terms of the Woodland Period, we might also add domesticated plant resources, which would be planted in the spring and harvested in the late summer. This would likely occur in alluvial bottomland areas along major rivers and tributaries where the soil is fertile and easily tilled.

Obviously, the above model presents a dichotomous view of prehistoric settlement in terms of riverine verses interriverine resources. This may be adequate as a heuristic framework, but alone it is inadequate for examining specific site function(s) based on physiographic location. This is particularly apparent for sites like 38RD158. The ecotonal location of 38RD158 on the edge of the first terrace above the Congaree River makes it difficult to assess site function in terms of the utilization of riverine verses interriverine resources.

Perhaps as Smith (1978) suggests, the location of 38RD158 on a riverine-interriverine ecotone would provide for the efficient exploitation of resources occurring in both of these major resource zones. Also as suggested by Smith, this may promote considerable human population concentrations and relatively permanent habitation of the site during Woodland, and possibly earlier times.

It is interesting that 38RD158 meets all but two of the nine criteria set forth by House and Wogaman (1978) that are indicative of intensive habitation. The apparent absence of midden straining and features at 38RD158 may be due to intensive twentieth century cultivation. In the final section, the various temporal components present at 38RD158 will be evaluated in terms of site function, utilizing in part the criteria established by House and Wogaman for intensive habitation.

SITE DESCRIPTION

Location and Modern Environment

Site 38RD158 is located in Richland County, South Carolina, about three kilometers south-southeast of Columbia. More specifically, it is located just south of Bluff Road, east of the intersection of Bluff and Atlas Roads.

Physiographically, the site occupies the top and gentle slopes of the first terrace of the Congaree River, at an elevation of about 40 to 46 meters above sea level. 38RD158 is at N33°56'4", W80°58'46" on the Fort Jackson South, South Carolina 7.5" USGS quadrangle.

The scatter of artifacts comprising 38RD158 extends for at least 20 acres northwest-southeast along the terrace. Only a small portion of this, an area slightly less than 1500 square meters located largely within the South Carolina Electric and Gas right-of-way, was actually subjected to subsurface examination during this research. This area of the site is about 42 meters above sea level. From here, the site (terrain) rises gently to the north and east.

The northern boundary of the sampled area is a borrow pit. To the south and west, the area is bounded by the terrace edge (bluff) overlooking the bottomland of the Congaree River. A portion of secondary State Highway 519 is located just west of the site, below the bluff edge. The eastern boundary was arbitrarily defined by clearing existing fallow field vegetation (See Figures 1 and 2).

Gills Creek is about 75 meters west of the site in the Congaree River bottomland, at an elevation of 34 meters above sea level. The upper reaches of this drainage are in Columbia. In the vicinity of 38RD158, Gills Creek is a permanent rank 3 drainage (Strahler 1964). From 38RD158, the stream meanders through the Congaree bottomland in a southwesterly direction and empties into the river some seven kilometers from the site. In terms of most direct distance, the Congaree River is 3.5 kilometers due west of 38RD158.

Two major areas of disturbance were observed within the sampled area. One of these is an erosional gully immediately east of the proposed tower location. The gully is oriented north-south and runs downslope from just below the borrow pit to the bluff edge, becoming more entrenched as it proceeds southward. The second disturbed area is a heavy equipment ramp leading down into the borrow pit. This area is located just northwest of the proposed tower location (See Figure 2).

At the time of excavation, vegetation at 38RD158 consisted of grasses, shrubs, briars and vines, all of which are characteristic of fallow fields. In the area sampled west of the erosional gully, a few short-leaf pines

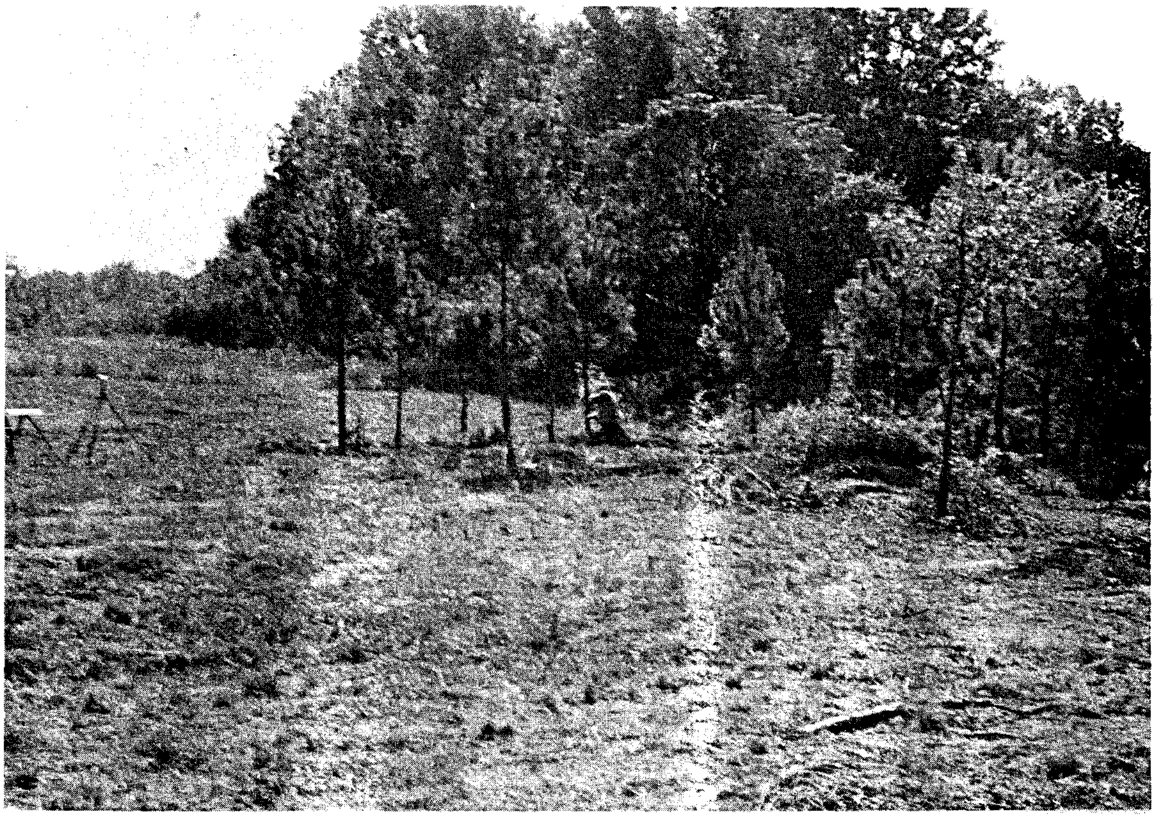


Figure 1: Overview of Site 38RD158 looking southeast (Block area in center of photograph).

(5-10 years old) were also present. Vegetation in the adjacent bottom land consisted of mixed hardwoods, including those species mentioned in the previous section.

The vegetational conditions at 38RD158 provide data with which to make inferences about recent land use. The presence of young pines west of the erosional gully suggests that that part of the site has not been cultivated for 5-10 years. On the other hand, the absence of pines east of the gully indicates more recent cultivation. Observations by James D. Scurry (Personal Communications), who visited the site about three years ago, confirms this interpretation. Remnant plow furrows on the surface and a distinct subsurface plow zone also indicate the relatively recent and intensive cultivation of the area sampled.

Historic Utilization of the 38RD158 Area

A consideration of historic land use information is relevant to interpreting the post-depositional processes affecting the prehistoric record at 38RD158. Background information pertaining to the historic utilization of the 38RD158 area will be presented, followed by information specifically relevant to the site.

After the establishment of Charleston in 1670, an economically important trade for Indian deerskins developed. In 1718, an outpost, "the Congarees," was established for this purpose on the west side of the Congaree River about a mile below the Broad-Saluda Confluence (McDowell n.d.).

Intensive settlement of the area began in 1733 with the establishment of Saxe Gothe Township. Northern European Protestants were encouraged to settle along the rivers in the midlands of South Carolina in order to promote territorial expansion and trade, and to buffer the lowlands against possible slave revolts or attacks from Indians or Spaniards (Meriwether 1940).

The rich bottomlands on the east side of the Congaree River were taken up about this time. By 1935, Swiss-Germans and English numbered between 800 and 900 in the Upper Congaree Valley (Meriwether 1940).

The movement of the Capital from Charleston to Columbia in 1786 symbolized the growing importance of the South Carolina back country. However, a check of an 1825 map (Mills 1969) tends to confirm that the prevailing Euro-African use of the area has been strictly agricultural until very recent times.

In terms of 38RD158, specifically, an abandoned late 19th-early 20th century farmhouse, with associated out-buildings, is located on the site just north of the borrow pit and south of Bluff Road. The considerable 20th century material recovered from the area sampled may be associated with the farmhouse, and indicates that 38RD158 has been under cultivation at least during the 20th century.

According to the current owner, B. D. Manning of Columbia (Personal Communication), the site has been under fairly continuous cultivation during the last 35 years. Further, Manning reports that to the best of his knowledge no 20th century structures have been sampled in the area, leading him to suggest that the 20th century material was dumped in the area and has subsequently been incorporated into the subsurface through cultivation. The apparent absence of 20th century structures in the area sampled, as indicated by archeological data and documents at the South Carolina Department of Archives and History, suggests that Manning is probably correct. Finally, with the exception of a few possible 19th century artifacts, there is no indication that the site was utilized earlier in the Historic Period.

EXCAVATION METHODS AND STRATIGRAPHY

Introduction

Prior to excavation, an area of the site approximately 90 meters southeast-northwest and 40 meters southwest-northeast was cleared of existing fallow field vegetation. A grid system and a permanent transit station were then established for the area of the site to be examined (See Figure 2). This was followed by excavation Stages I and II.

The subsequent discussion will focus on intrasite horizontal and vertical controls, excavation Stages I and II, and a consideration of stratification, disturbance, and the implication of disturbance for temporal-spatial studies. Justification for the specific methods utilized for data recovery at 38RD158 will also be presented.

Intrasite Controls

In order to examine the horizontal and vertical distribution of various archeological data sets indicative of temporal, spatial and functional variability in the archeological records, it is necessary to establish and maintain tight excavation controls. Only in this way can we accurately record data essential to a meaningful interpretation of the archeological record.

Horizontal Controls

A basic grid system consisting of units 8 meters square was established over the area of the site to be investigated (See Figure 2). The size of these units was determined by the size of the area to be impacted by tower construction ($8m^2$ - Stage I excavation). It was felt that a grid system consisting of units of uniform size would facilitate site mapping, provide comparable data collection units if desired, and provide a framework for the systematic dispersal of sample points during Stage II (Supplemental testing) of excavation.

Actual excavation units for both Stages I and II were $1m^2$. Unit size was determined by the need for units to be large enough to easily excavate, yet small enough to provide adequate horizontal control without resorting to point provenience. One meter squares seemed to be an ideal compromise. Finally, consistency in the use of $1m^2$ units provided for the collection of comparable data necessary for examining spatial patterning in the archeological record.

Vertical Controls

Vertical control was established by means of a permanent transit station located at grid coordinates N28, W26 (See Figure 2). An instrument height of

1.60 meters determined the site datum plane. In this way it was possible to correlate the relative depths of material excavated within a given unit and from one unit to another over the site area.

Excavation was by 10cm arbitrary levels from ground surface to contact with the substrate. Transit elevations were recorded for the opening and closing of each level.

The use of arbitrary levels was due to heavy disturbance resulting from modern cultivation; destroying the vertical integrity of most of the site. Stratigraphy was present on the west side of the erosional gully (Figure 2), but had developed as a direct result of cultivation and past-cultivation soil formation processes. Consequently, the stratigraphy present had no temporal significance in terms of the archeological record. The uniform use of 10cm arbitrary levels was to provide comparable data collecting units sufficiently refined for vertical-temporal control in the event that some of the deeper excavation units contained undisturbed basal deposits.

Data Recovery

Each excavation unit (Stages I and II) was designated by the grid coordinates at the southwest corner of the unit. Excavated soil was screened through 1/4" mesh hardware cloth for recovery of archeological material. All archeological material recovered was saved and placed in bags containing the appropriate provenience information (Provenience data is presented in Appendix I). Each day the material was transported from the field to the lab, where it was washed, catalogued, and received preliminary sorting. Once fieldwork was completed, analysis began by examining the processed material and devising appropriate analytical categories based on project research goals.

Stage I-Block Excavation

The area of the block excavation (Stage I) corresponded with the area of proposed tower location (See Figures 2 and 3). The primary purpose of this stage was to examine in detail small scale spatial patterning.

Initially, it was intended to excavate the entire $8m^2$ block (64 one meter squares). However, as fieldwork proceeded it became evident that this strategy was not feasible. Consequently, only 39.06% (25 one meter squares) of the area was excavated.

Excavation began with the removal of the four corner units of the block area. All four units indicated disturbance down to the substrate. These units also indicated that soil depth was greatest (ca. 50cm) at the southern (downslope) end of the block.

Excavation proceeded with the removal of Trenches A and B (See Figure 2), with the intention of excavating the entire block. In spite of the vertical disturbance produced by cultivation, it was felt that spatial studies could still be undertaken.

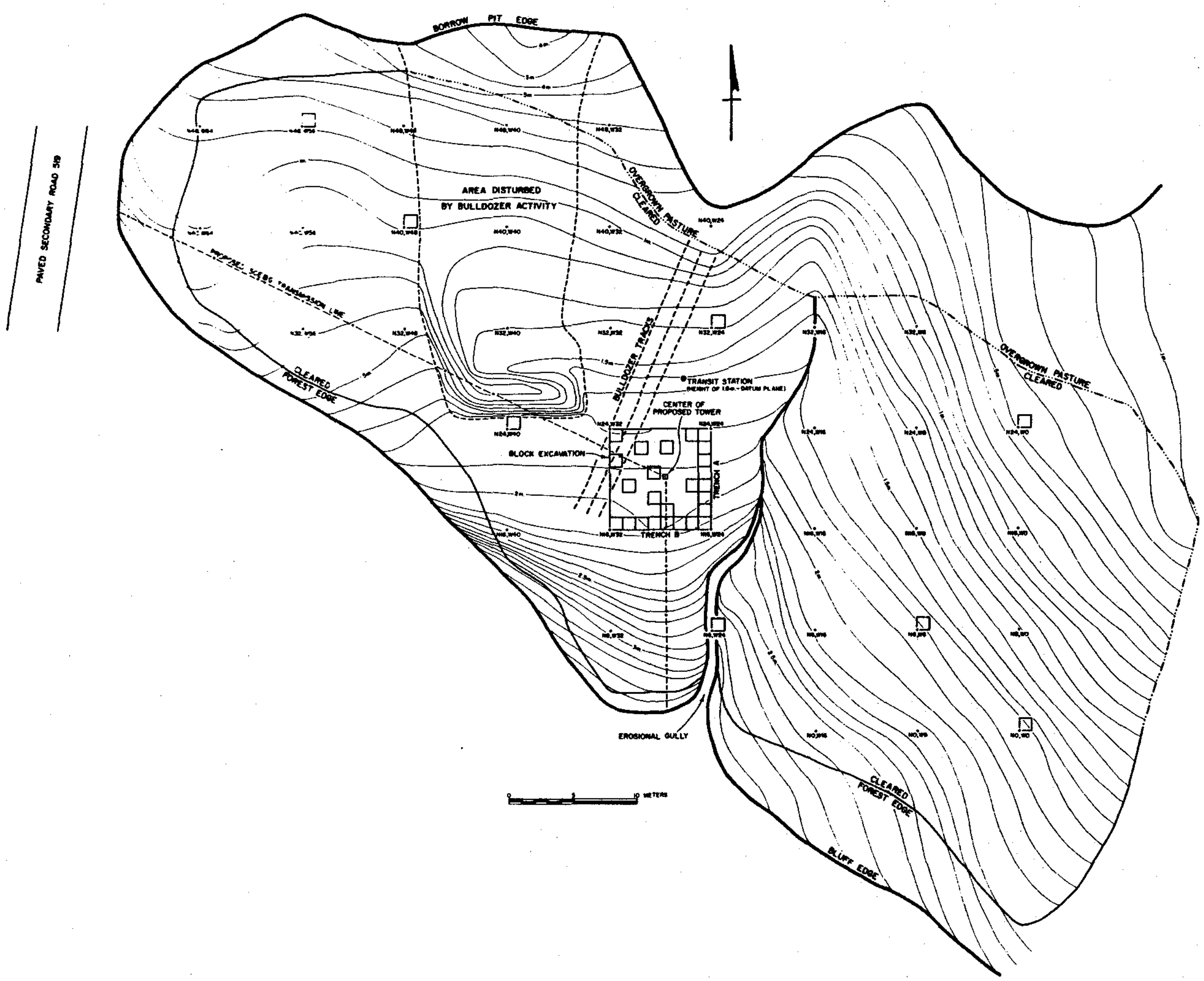


Figure 2: Site map of 38RD158.

38RD158

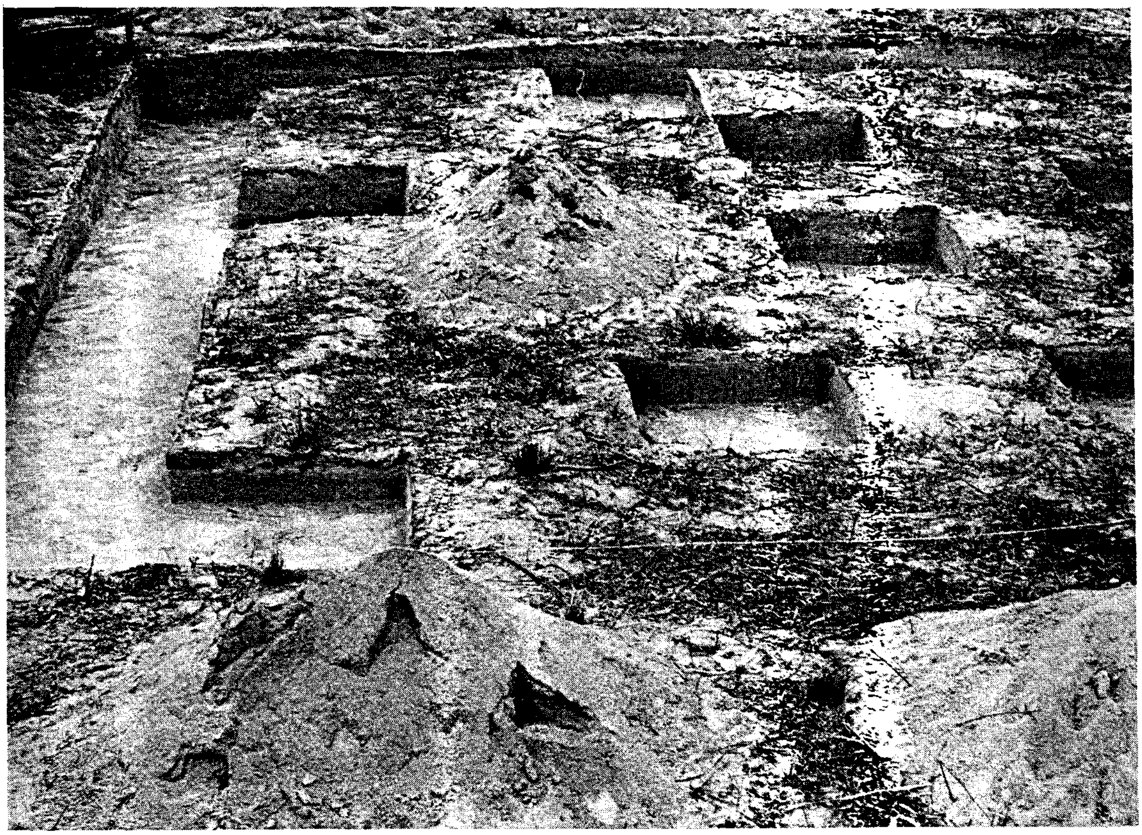


Figure 3: Photograph of Block Excavation looking south.

During the time of excavation the Columbia area was undergoing a period of drought. This, in combination with clay content of the soil being excavated, produced a soil with "cement-like" consistency. Even soaking the soil with water prior to excavation did not alleviate the problem, the result being that picks became essential excavation tools. The problem was compounded by the difficulty in screening the "cement-like chunks" of soil. Therefore, excavation proceeded at a much slower rate than was anticipated. With field time rapidly running out, a decision had to be made balancing research goals against time constraints. After the excavation of Trenches A and B, forty-eight $1m^2$ units remained unexcavated in the block area. It was at this point when it became evident that a change in field strategy was impossible to excavate all the remaining units. Therefore, a sampling design was implemented.

In order to adequately examine spatial variability in the total block area, all areas of the block would have to be represented by excavated data. To do this, it was necessary to disperse sample points throughout unexcavated portions of the block. It was felt that this could best, and most objectively, be accomplished with a stratified random sampling strategy.

This strategy involved breaking down the group of forty eight remaining unexcavated units into eight sampling strata, with each strata consisting of six adjacent, potential excavation units. One unit was randomly selected for excavation from each of the eight strata. It should be noted that the eight sampling strata were spatially asymmetrical due to previously excavated units.

In addition to the eight units selected, one additional unit (N22, W28) was non-randomly selected to increase sampling dispersion. Consequently, nine (18.75%) of the remaining forty-eight units were excavated.

Since the entire block could not be excavated, it was obvious that some of the detail desired for this study was lost. However, when one considers the relatively small area of the block, the dispersal of sample points throughout the block, and the relatively close spacing of the units excavated, it seemed likely that considerable detail, and certainly general trends, in spatial patterning would be evident.

Stage II - Supplemental Testing

Supplemental testing was undertaken within the immediate vicinity of the block excavation in the area of the site under investigation (See Fig. 2 and Fig. 4). The purpose of this stage was to examine larger scale spatial patterning.

Initially, it was intended to excavate a $1m^2$ unit at each corner of all the $8m^2$ units comprising the site grid system. It was felt that this relatively close spacing of excavation units, and the systematic coverage of the area, would enable us to examine larger scale spatial patterning in considerable detail. For reasons already discussed under Stage I, however, the original sampling strategy planned for Stage II had to be modified.

Given the crew size and remaining field time, it was estimated that six to eight $1m^2$ units could be excavated. Again, in order to maximize the dispersion of sample points over the area in as objective a manner as possible, a stratified random sampling strategy was employed.

The points defined by the grid coordinates at the corners of each of the $8m^2$ units, excluding the block excavation, formed the sample universe (30 sample points). Six sampling strata were devised by grouping sets of five adjacent sample points. One point (unit) was randomly selected for excavation from each of the six sampling strata.

After these six units had been excavated, there was sufficient time to excavate two additional units. In order to increase sampling dispersion, units N24, W0 and N32, W24 were non-randomly selected for excavation.

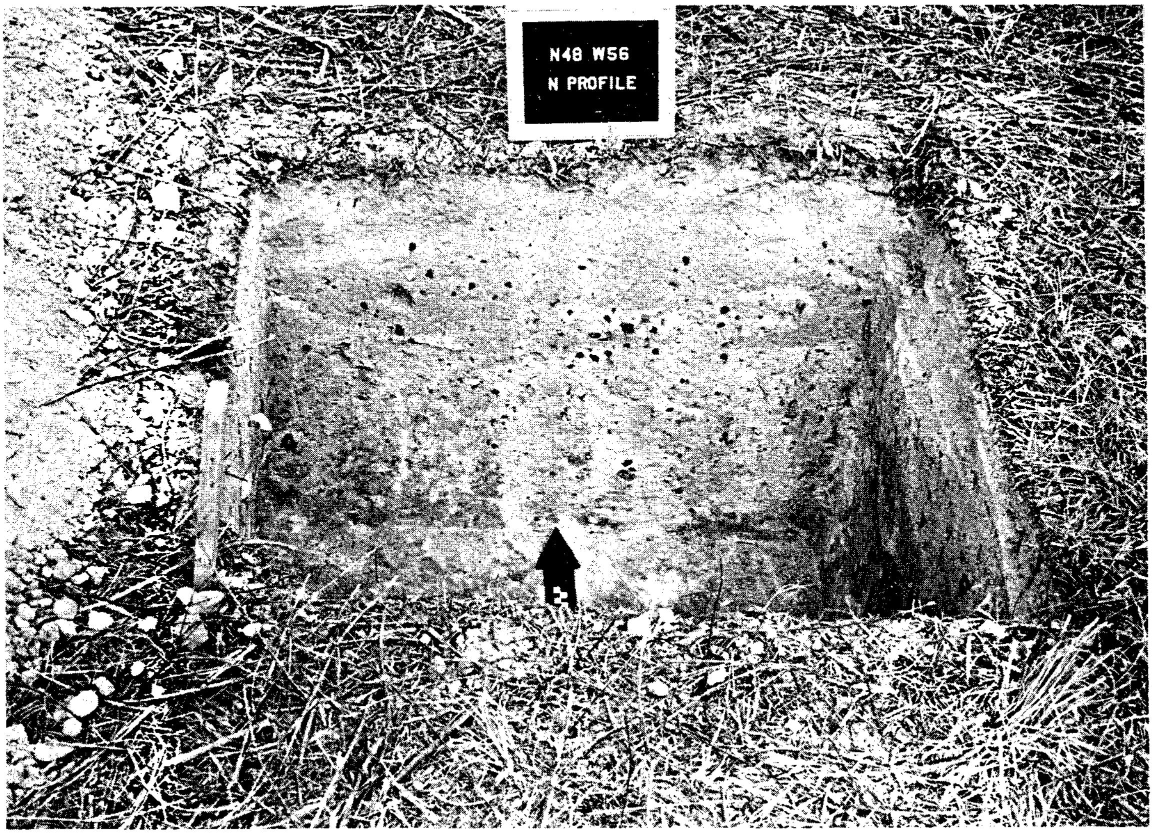


Figure 4: Photograph of Supplemental Testing of Unit N48, W56 looking north.

Given the size of the area tested during Stage II, in conjunction with the relatively small number of widely spaced units excavated, it is certain that detailed variability in larger scale spatial patterning will not be evident. However, there should still be "hints" of larger scale patterning of a more general nature.

Stratigraphy

The profiles of Trenches A and B of the block area excavation are fairly typical of the stratigraphy present on the west side of the erosional gully (See Fig. 5 and Fig. 6). Descriptions of the various soil strata are presented in Figure 5.

Soils on the east side of the erosional gully are generally shallower (See Appendix I for unit depths-proveniences) and exhibit less well defined stratigraphy. Essentially, these units are characterized by two soil strata. The upper stratum is similar to Stratum D in Figure 5. The lower stratum (substrate) is like that of Stratum E.

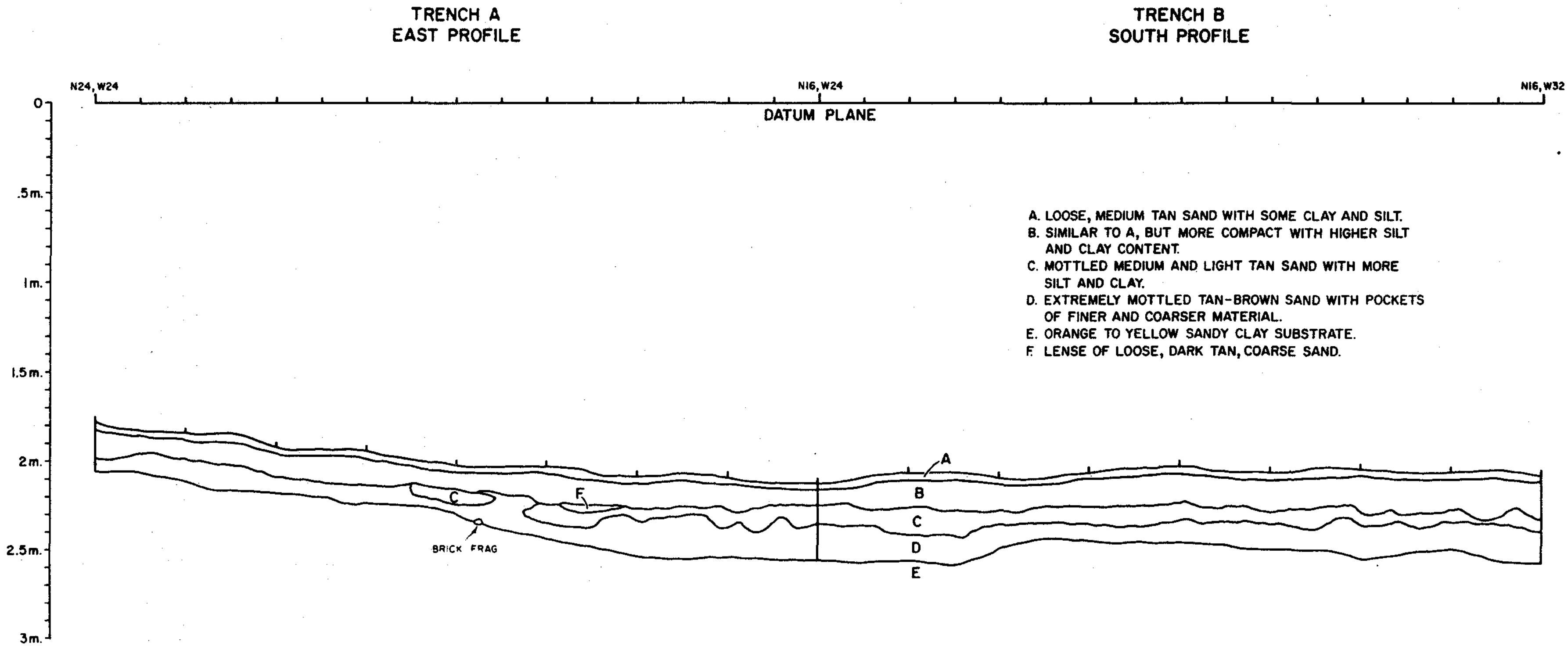


Figure 5: Block Excavation of Trenches A and B profiles.

Variability in the stratigraphy east and west of the erosional gully may be accounted for by factors largely related to past cultivation. The existing stratification on the west side of the gully appears to be in large part due to cultivation, in combination with the soil formation processes (e.g. leaching) operative since cultivation last occurred some 5-10 years ago.

Similar processes were operative on the east side of the gully. Here, however, the shallower soil and more recent cultivations (last 2-3 years) has hampered soil formation processes that would, given enough time, lead to greater stratigraphic differentiation (Buckman and Brady 1969).

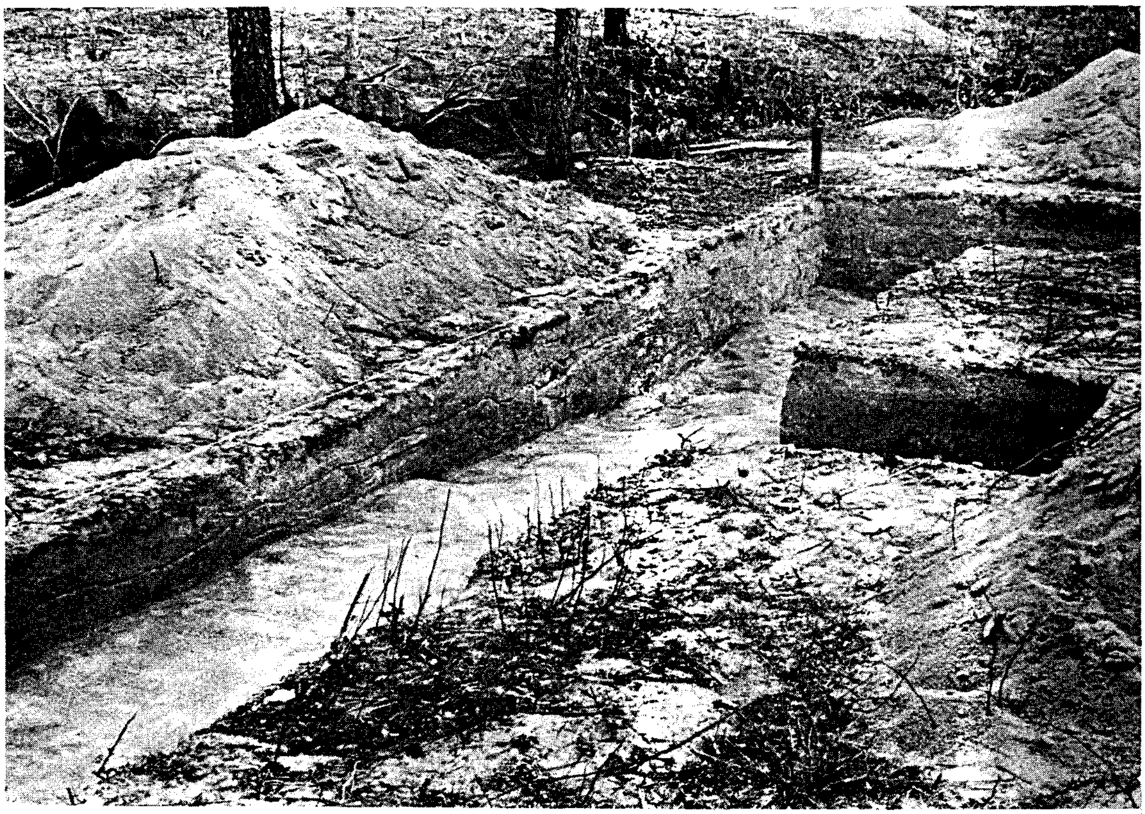


Figure 6: Photograph of Block Excavation of Trench A looking east.

Stratigraphic evidence suggests that with the possible exception of the basal portions of Stage II excavation units N40, W48 (levels D and E) and N48, W56 (levels E-G) on the west side of the gully, the units excavated during this project were completely disturbed by cultivation down to the substrate. The apparently undisturbed basal soils of units N40, W48, and N48, W56 were characterized by a light to medium tan, coarse quartz sand with a few ferric concretions and quartz pebbles. This soil was noticeably softer than the plow zone above. Of these two units, only the basal portion of N48, W56 contained temporally diagnostic artifacts (Early-Late Woodland. See Appendix I).

Stratigraphic and Non-stratigraphic Indications of Disturbance

As previously discussed, modern cultivation is largely responsible for the existing stratigraphy and disturbance in the area of the site investigated. Bulldozer activity associated with the borrow pit area is another source of disturbance. However, it is spatially restricted and quite superficial in terms of the area examined (Figure 2). Consequently, the following discussion is focused on indications of disturbance produced by cultivation.

Direct evidence of disturbance by cultivation includes: (1) plow furrows still evident on the ground surface; (2) profiles with plow scars down to Stratum D and often into the substrate (Stratum E); and (3) bits of substrate "pulled-up" into Stratum D. Indirect evidence of disturbance by cultivation includes: (1) mixing and stratigraphic reversal of modern and prehistoric artifacts; (2) quartz pebbles and concretions throughout the various strata (in a mature, undisturbed profile, these tend to concentrate in the bottom strata); (3) compaction of the upper soil strata (normally, upper strata are quite loose); (4) considerable silt and clay in Strata A-C (this indicates the down-slope movement of finer soil particles during periods of cultivation); and (5) small sherds with rounded edges (cultivation over long periods tends to break up and round sherds).

Implications of Disturbance for Temporal-spatial Studies

The effects of disturbance do present problems for temporal-spatial studies. However, these problems are not insurmountable. In terms of the temporal problem, many of the artifacts recovered from 38RD158 are temporally diagnostic in that similar artifacts have been dated in good stratigraphic context in other nearby areas of the Southeast (e.g. Coe 1964). Non-temporally diagnostic artifacts, however, present a greater problem. Nevertheless, as will be discussed in Section VI, it may be possible to reasonably infer temporal affiliation by examining variability in artifact-raw material(s) correlations over time.

Spatial disturbance is less a problem. Studies have shown that the disturbance produced by cultivation is primarily vertical and that there is usually relatively little horizontal displacement of archeological materials (e.g. Roper 1976).

ARCHEOLOGICAL SITE DATA

Introduction

The prehistoric archeological site data recovered from 38RD158 during excavation Stages I and II will be considered in this section. Material of twentieth century origin will not be discussed since it is not directly relevant to the research at hand. The twentieth century data is, however, presented in Appendix I(A) solely as documentary evidence for the disturbance of the prehistoric archeological record.

The prehistoric data is considered in sections according to non-artifactual and artifacual analytical categories. In line with the research goals stated in Section I, each analytical category will be defined and justified on the basis of probable function(s), using attributes thought to be "meaningful" indicators of specific behavioral activities and/or site function(s). Technology, as it relates to function, will also be considered. The analytical categories, and quantification of the attributes for each category, are presented in Appendix I(B-G) by provenience.

Based in large part on the above data, it should be possible to make temporal period-artifact correlations (Section VI) that will enable us to reconstruct the assemblage represented by each temporal component at 38RD158. Each assemblage will then be examined in terms of spatial patterning (Section VII) in an attempt to delineate activity areas. The probable function(s) of these areas can be inferred from the spatial association of specific combinations of the functionally derived constituent parts (artifactual and non-artifactual) of an assemblage(s). Thus, an integrated approach to examining temporal variability in function--by articulating "functionally meaningful" artifact, assemblage, and spatial data for each temporal component (Section VIII)--should provide a degree of understanding relevant to temporal variability in specific behavioral activities and site function(s) at 38RD158.

Non-Artifactual Data

The analytical categories considered in this section are: lithic raw materials, 2 chipped stone debitage, and features. Although these categories are potentially important sources of data for examining temporal, functional, and spatial variability, they are not, strictly speaking, artifact categories. Rather, they were utilized for artifact manufacture (lithic raw materials), the by-product of artifact manufacture (chipped stone debitage), or structual remains (features).

Lithic Raw Materials

In terms of Site 38RD158 research, lithic raw materials will be used in part to derive temporal period artifact correlations necessary for reconstructing the assemblages represented by the various temporal components. This assemblage data, in conjunction with a consideration of temporal variability in the differential procurement and use of various locally and non-locally available (with respect to 38RD158) lithic raw materials, should provide key insights into how the site was utilized over time with respect to specific activities and site function(s).

It should be emphasized that a consideration of the occurrence of various raw materials (e.g., local vs. non-local) at a site is only a first step toward understanding site activities and site function(s) from the perspective of lithic materials. More important is a consideration of the form (functionally derived lithic categories) in which various raw materials occur at a site. As such, the following discussion of the range of raw materials present at 38RD158 is intended in large part to provide a context within which to view the other lithic categories. By examining raw materials from the perspective of differential availability-procurement and the form(s) in which they occur at the site, it should be possible to make some sound inferences regarding site activities and site function(s).

The physical properties and possible source areas for the types of lithic raw material encountered at 38RD158 are discussed in House and Ballenger (1976), House and Wogaman (1978), Taylor and Smith (1978), and Cable, Cantley and Sexton (n.d.). Ms. Lee Novick identified the raw materials from 38RD158. Since these raw materials crosscut various lithic categories, specific considerations of raw materials as related to site activities and site function(s) will be discussed with the appropriate lithic categories. Raw material data is presented in Appendix I(B-F).

For purposes of the following discussion, the lithic raw materials will be broken down into locally available vs. non-locally available raw material. Source area data utilized for these break-downs was obtained from the literature cited above. It should be noted, however, that raw material source areas are currently not well known and often cannot be isolated beyond fairly large geographic areas, e.g., Piedmont, Coastal Plain, etc. The physical properties of the various raw materials will be considered only insofar as the materials themselves seem to have determined the technology used for artifact manufacture (e.g. flaking, grinding, etc.) and the range of probable function.

Lithic raw materials of probable non-local origin include Coastal Plain chert (Lower Coastal Plain in the vicinity of Allendale County), orthograde quartzite (Lower Coastal Plain, probably in the vicinity of Berkeley County), porphoritic ryolite (Piedmont, probably North-Central South Carolina), felsic tuff (Piedmont, probably North-Central South Carolina), opaque ridge and valley chert (probably Northwest Georgia or Eastern Tennessee, but possibly from carbonate-rich deposits in the South Carolina Piedmont), translucent ridge and valley chert (probably Northwest Georgia or Eastern Tennessee), steatit

(Western Piedmont of South Carolina), silicate (probably Piedmont, but possibly Fall Line of South Carolina), micaceous schist (probably Piedmont of South Carolina), and igneous/metamorphic (probably Piedmont of South Carolina).

Of the above raw materials, only steatite, micaceous schist, and igneous/metamorphic are not amendable to flaking. The soft nature of steatite and micaceous schist made them particularly appropriate raw materials for the manufacture of stone vessels. Igneous/metamorphic is a catch-all term for fine to coarse-grained materials with varying combinations of quartz, feldspar, plagioclase, and hornblende. The finer-grained igneous/metamorphic rocks were sometimes used in the manufacture of ground and/or polished artifacts. The harder coarser-grained materials, on the other hand, were well-suited for use as handstones or hammerstones.

As would be expected, raw materials of non-local origin occurred in relatively low frequencies at the site, ususally in the form of small, bifacial thinning or resharpening flakes resulting from late stage biface manufacture or artifact maintenance. The relatively few artifacts of non-local material usually occurred as finished artifacts (some bifaces resharpened) or artifacts broken during use.

Raw material of probable local origin is confined to white quartz. White quartz is generally available throughout the Fall Line and Piedmont physiographic provinces of South Carolina. There is some evidence, however, that considerable variability exists in the flaking quality of this material and that the procurement of this resource may have been restricted to selected outcrops or quarries (Taylor and Smith 1978).

At Site 38RD158, white quartz is by far the dominant raw material represented. It occurs abundantly in a wide variety of forms, including fist-sized streamworn cobbles, cobble fragments, bifacial tools, and debitage ranging from large primary decortication flakes to small resharpening flakes. Other artifact forms are present, but less frequently encountered. As indicated by the debitage and bifacial tools, much of this material is of relatively good knapping quality. A considerable amount of the material does, however, exhibit a more angular fracture and appears to have been better suited for purposes other than knapping (e.g., hammerstones, possible stone boiling or roasting, etc.).

The quantity of quartz raw material in the form of unmodified cobbles and large decortication and thinning flakes, indicates that a major function of 38RD158 during one or more periods of time was the procurement and subsequent reduction of quartz cobbles from the immediate vicinity. The range of forms(modified and unmodified) in which quartz raw material occurs at 38RD158 further suggests a relatively wide variety of specialized activities involving the manufacture, use and maintenance of quartz artifacts. The utilization of quartz at 38RD158, and its implications for site activities and site function(s) will be discussed in more detail when considering the other lithic categories.

Chipped Stone Debitage

Attributes considered for chipped stone debitage are flake type, flake area, and raw material (Appendix I[B]). When considered together, these attributes are thought to be especially useful indicators of activities related to the differential procurement, modification, and utilization of various locally and non-locally available lithic raw materials. More specifically, an examination of these attributes should enable us to determine, for each raw material and its respective artifacts, what stages of lithic reduction and/or artifact manufacture-maintenance likely did or did not occur at 38RD158 (Gould 1974; House and Ballenger 1976; House and Wogaman 1978).

The raw materials represented by the chipped stone debitage at 38RD158 have already been discussed in terms of differential availability. Here, however, the emphasis will be on the actual utilization of the various raw materials, as reflected by flake type and flake area.

Five flake types were distinguished at 38RD158. These are primary decortication flakes, secondary decortication falkes, internal flakes, chunks, and bifacial thinning-resharpening flakes. A detailed discussion of these flake types may be found in House and Ballenger (1976) and House and Wogaman (1978).

Generally, primary, secondary, and internal flakes represent progressive stages in the initial reduction of lithic raw materils. Chunks are, strictly speaking, not flakes in that they lack observable flake characteristics. They are, however, angular pieces of debitage produced during the very earliest stages of lithic reduction. For any given raw material, debitage representing early stages of reduction is most likely to be encountered at sites at or relatively close to source areas.

Bifacial thinning flakes were removed in the process of thinning or resharpening bifacial tools. These flakes generally represent later stages of lithic reduction, oriented toward the manufacture and maintenance of bifaces. With increasing distance from a given raw material source area, flakes of this type tend to become proportionally (in relation to early stage reduction flakes of the same material) more numerous and smaller representing an increase in tool maintenance-curation activities. In this regard, a consideration of flake area (an index of flake size) may be particularly useful for deriving a fuller understanding of the differential manufacturing and maintenance-curative activities that occurred at 38RD158 with respect to various lithic raw materials.

Flake area was determined for all flakes (according to flake type and raw material) by superimposing them over a series of progressively large squares constructed on metric graph paper. The original area of broken flakes was also estimated in this manner.

Area one was .25 sq. cm or less; area two was greater than area one, but less than or equal to 1.00 sq. cm; area three was greater than area two, but less than or equal to 2.25 sq. cm; and area four was greater than area three, but less than 4.00 sq. cm. The relatively few flakes larger than 4.00 sq. cm were assigned area five. Finally, it should be noted that most area one flakes were probably too small to recover with the 1/4 inch mesh screen.

The data presented in Appendix I(B) indicate that quartz debitage is by far the most highly represented in every flake type and flake area category. A number of inferences may be deduced from this data. These include: all stages of quartz reduction (initial reduction of raw material, artifact manufacture, artifact maintenance) occurred at 38RD158; quartz was the dominant raw material utilized at 38RD158 during one or more temporal periods; quartz was available at or within the immediate vicinity of 38RD158; and one function of 38RD158 was the procurement of quartz raw material to be utilized at the site and probably elsewhere.

By contrast, a considerably different pattern is suggested by the debitage representing the other lithic raw materials. As expected, these materials of non-local origin (with respect to 38RD158) were differentially utilized in comparison with quartz. This is suggested by: the general paucity of debitage of non-local material; the virtual absence of initial reduction stage(s) debitage of non-local material; and the debitage of non-local material present at 38RD158 indicates primarily final tool manufacturing and maintenance stages. In regards to the later point, the evidence further suggests that the debitage of raw materials located at greater distances from 38RD158 tends to occur at the site with less frequency and are more likely to represent tool maintenance-curation activities (small bifacial thinning-resharpening flakes).

The relatively minimal use of non-local materials in an area where quartz appears to be abundant suggests that they were preferentially selected; possibly because of physical properties that would confer specific technological and/or functional advantages. The cryptocrystalline structure of most of these materials (in comparison with quartz) enhances flaking quality-predictability and the production of thinner, sharper edges better suited for cutting and slicing relatively soft animal and plant tissues. For these reasons, such materials are more likely to have been curated and, consequently, to occur at archeological sites distant from source areas (Goodyear 1979).

Features

No features (structures, hearths, storage pits, refuse pits, etc.) were encountered at 38RD158. The artifact density and diversity at the site suggest fairly intensive utilization during one or more periods of prehistory. This being the case, evidence of features would be expected. The lack of such evidence may be due to the extreme vertical disturbance noted earlier. If this is true, then less disturbed areas along the forested margins of the site may contain evidence of features.

Artifactual Data

In this section the analytical categories considered are: (1) flake tools, (2) bifacial tools, (3) Quartz Cobble and Cobble fragments with cortex, (4) angular quartz fragments without cortex, (5) other lithic artifacts, and (6) ceramics. Artifactual data and, hence these categories, are derived for present purposes from those classes of objects and tools that were intentionally manufactured or unintentionally modified through use. It is assumed that the artifacts comprising each of these analytical categories have functional meaning and that the constituent artifacts were utilized for a specific function(s) that can be reasonably inferred through an examination of attributes that have been found indicative of function by other researchers. Further, it is also assumed that an examination of these categories by means of their respective attributes will indicate temporal variability in function.

Flake Tools

The flake tools from 38RD158 may be broadly divided into two categories: those that were intentionally modified for use for a specific function(s) and those that were utilized and unintentionally modified during use. The attributes examined (Appendix Ic) for these tools have been found by other researchers to be particularly useful indicators of function (Gould 1974; Seminar 1964; Tringham et al. 1974; Wilmson 1970, 1974).

An examination of Appendix Ic indicates that there are functional differences between modified and utilized flake tools. These differences tend to correlate with raw materials as indicated by a comparison of local (quartz) with non-local materials. In this regard, the following observations are pertinent.

1. Flake tools are more likely to be of non-local material, but quartz is more likely to have been modified.

2. Flake tools of quartz are all on interval flakes, whereas non-local flake tools tend to be on thinning flakes.

3. Utilized flake tools of both quartz and non-local material tend to be larger than modified tools.

4. The number and length of modified -utilized edges are very similar for both local and non-local raw materials.

5. Concave use edges are dominant in modified and utilized flake tools of quartz, whereas convex-straight use edges are dominant in non-local utilized materials. The single modified flake of non-local material has a concave use edge.

6. Utilized flakes of non-local material have deeper nibbling scars than utilized quartz flakes, whereas modified flake tools of quartz have much deeper retouch-resharpening scars than their counterparts of non-local material.

7. The surface location of edge damage on quartz modified and utilized flake tools was exclusively on the dorsal surface. By contrast, flake tools of non-local material had edge damage on both dorsal (dominant) and ventral (frequent) surfaces.

8. Use-edge angles were much steeper for quartz flake tools ($\bar{x}$ 66.5°) than for flake tools ($\bar{x}$ 43.2°) of non-local material.

The following functional implications may be derived from these observations.

1. Non-local raw materials had a greater tendency to be curated.

2. Quartz flakes were more likely to have been modified/resharpened because of greater available mass.

3. Modified tools (quartz and non-local material) are smaller because of reduction during manufacture and resharpening during maintenance.

4. The number and length of modified-utilized edges does not appear to be indicative of function in this assemblage.

5. Use-edge morphology, edge damage, and use-edge angles suggest that quartz flake tools functioned primarily as scrapers for processing relatively dense (hard) materials; whereas flake tools of non-local material tended to be utilized for cutting-slicing relatively soft materials such as plant and/or animal tissue.

Bifacial Tools

Bifacial tools and the categories utilized in this study (hafted bifaces, blanks, and other bifaces) are defined by House and Ballenger (1976). The attributes examined for each of the biface categories (Appendix Id) have been found to be useful indicators of technology and function (Crabtree and Butler 1964; Seminar 1964; Wilmsen 1970, 1974; Ahler 1974; Gould 1974; Tringham et al. 1974; House and Ballenger 1976; House and Wogaman 1978). The hafted bifaces also have temporal implications (Coe 1964; Keel 1976) as indicated by Table 1. Although the present emphasis is on function, technology and chronology will also be considered in this section insofar as they relate to functional variability. With regard to function, previous research has indicated that bifacial tools were most often utilized in piercing (projectile points) and/or cutting-chopping activities.

Based on Appendix I(d) and Table 1, the following observations are pertinent:

1. As a generalization, bifaces of quartz are most frequent at 38RD158. More specifically, a consideration of the hafted bifaces indicates that quartz was: (A) the exclusive raw material utilized at 38RD158 during the Middle -Late Archaic, (B) dominant during the Mississippian Period, (C) about equally utilized in comparison with non-local material during the Early Archaic, and (D) infrequently

utilized during the Woodland Period. In terms of the remaining biface categories (blanks and other bifaces), quartz is by far the dominant raw material represented.

2. Quartz blanks generally represent breakage or discard during the biface manufacturing sequence.

3. Blanks of non-local material, in comparison with quartz blanks, are more likely to have been broken or discarded later in the biface reduction sequence. These observations pertaining to blanks are supported by the observed debitage patterns at 38RD158.

4. The biface category "other" represents ovate-triangular bifacial tools and unidentifiable biface fragments that were broken during use in cutting functions, as indicated by breakage patterns and use-edge damage.

5. The "other" bifaces were not resharpened or, if so, evidence of resharpening can not be determined.

6. The hafted bifaces from 38RD158 appear to represent primarily breakage and/or discard resulting from use and maintenance, as indicated by breakage patterns, use-edge damage and resharpening.

7. Hafted bifaces from 38RD158 were utilized as projectile points or as cutting tools (knives), with some specimens possibly utilized for both functions. This, however, appears to have been variable with respect to time and raw material (local vs. non-local). Evaluations of hafted biface function(s) are based largely on considerations of breakage patterns, use-edge damage and resharpening-retipping.

8. The Early Archaic hafted bifaces appear to be about equally divided according to function (projectile points vs. knives). In turn, each functional category is equally represented with respect to local vs. non-local raw materials, with half of the artifacts of each of these raw materials showing definite evidence of resharpening.

9. The Middle-Late Archaic hafted bifaces are exclusively of quartz and appear to have functioned primarily as projectile points. Definite evidence of resharpening is minimal.

10. Hafted bifaces of the Woodland Period are predominantly of non-local material and likely functioned largely as projectile points. Nevertheless, evidence for use as knives is slightly greater than for the Middle-Late Archaic. Of the Woodland hafted bifaces, only two (Late Woodland Yadkin triangular points-arrow point?) appear to have been resharpened (actually retipped). Both are of non-local material.

11. Mississippian hafted bifaces (caraway triangular points) are dominantly of quartz and probably functioned largely, if not exclusively, as projectile (arrow) points. Only one biface (non-local raw material) exhibits definite evidence of resharpening-retipping.

The following inferences may be drawn from these observations:

1. Generally, though variable over time:

    a. Quartz was available and procured at 38RD158.

    b. At least some, and possibly most, quartz bifaces recovered were manufactured at the site.

    c. Quartz bifaces were used and maintained as projectile points and/or knives in the procurement and processing of various floral and faunal resources.

    d. Quartz bifaces that functioned as knives (cutting tools) were utilized primarily in the processing of relatively coarse-dense material such as wood, bone, cartilage, etc.

    e. The quartz bifaces recovered from 38RD158 represent primarily those that were discarded as a result of (1) breakage during manufacturing or use, or (2) tool-life exhaustion.

    f. Quartz bifaces (finished or in preform stage) were transported to other sites in the system where they were utilized, maintained, and subsequently discarded when broken or exhausted. It is expected that quartz bifaces would be most intensively utilized at sites where suitable local raw material was unavailable or in insufficient quantity. Consequently, quartz bifaces would be more highly curated in these contexts than at 38RD158 because they assume a "non-local" character analogous to the non-local raw material defined in relation to 38RD158.

    g. Bifaces of non-local raw material tend to have been manufactured (at least initial reduction) elsewhere, but transported to 38RD158, where they were utilized, maintained, broken-exhausted through use, and subsequently discarded.

    h. Bifaces of non-local raw material were used as projectile points and for cutting relatively soft floral and/or faunal tissues at 38RD158.

    i. Bifaces of non-local raw material had a greater tendency to be curated at 38RD158 than did quartz bifaces.

2. Variability in the proportions of bifaces of local (quartz) vs. non-local raw materials over time at 38RD158 may be indicative of change in site function. This is assuming, of course, that each of the two raw material categories was best suited, and hence selected, for the performance of a specific range of activities. Therefore, it may be significant that both quartz and the non-local raw materials appear to have been suited for use as projectile points, but suitability for various bifacial tool cutting functions apparently differed. A number of functional inferences may be drawn at the site and regional levels of analyses through a consideration of biface variability over time at 38RD158. These

inferences are:

a. The biface data suggest that 38RD158 had a low intensity of utilization during the Early Archaic that involved tool use, maintenance, discard, and possibly the manufacture of quartz bifacial tools by small, highly mobile groups exploiting (procuring and processing) a relatively narrow range of high density, seasonally available resources within the vicinity of the site. This suggested patterns for the Early Archaic utilization of 38RD158 is supported by previous research in the South Carolina Piedmont (House and Ballenger 1976; House and Wogaman 1978; Taylor and Smith 1978).

b. In comparison with the Early Archaic, the Middle-Late Archaic biface data may suggest a decrease in mobility and a corresponding increase in group size and sedentism. A broader range of activities conducted at 38RD158 might also be inferred. Although this pattern is probably generally correct, it is uncertain whether the change indicated involved a "more intensive" use of the same resources exploited during the Early Archaic at 38RD158 or a shift toward the utilization of a broader range of resources. In line with the suggested pattern is an apparent emphasis at 38RD158 on the use of functionally specific artifacts (i.e. hafted bifaces seem to have been used primarily as projectile points). If this is true, then many of the "other" bifaces (quartz bifaces representing cutting functions involving contact with coarse-dense material such as bone or wood) may be attributable to the Middle-Late Archaic lithic assemblage. Bifaces such as these typically occur in a Middle-Late Archaic context (House and Ballenger 1976; House and Wogaman 1978). The apparent lack of large unifacial tools in Piedmont Middle-Late Archaic assemblages, indicative of woodwashing, suggests that the "other" bifaces were probably used in butchering. Wear and breakage patterns further suggest "heavy-duty" butchering involving twisting-prying associated with dismembering large animals, possibly deer (House and Ballenger 1976; House and Wogaman 1978).

c. An increase in the use of non-local raw materials for hafted bifaces during the Woodland Period at 38RD158, in comparison with earlier periods, indicates either increased group mobility (highly unlikely assuming fairly large populations by this time), increased mobility of certain individuals (e.g. hunters) within groups, and/or exchange networks between neighboring groups. The relatively little evidence for the curation of hafted bifaces of non-local material suggests that the mechanism(s) of procurement utilized was dependable. Further, an emphasis on the utilization of non-local material in an area where quartz was abundant indicates a functional preference. Since hafted bifaces of non-local material were apparently utilized as projectile points and as cutting tools, it may be that the non-local material was better suited for a broader range of functions and was, therefore, emphasized. This, in turn, may indicate a broader range of economic activities and possibly larger population concentrations on a more permanent basis than during earlier or later prehistoric times. This inference is supported by the considerable artifact variability in other categories that can be reasonably attributed to Woodland utilization of the site (See Section IV).

d. An apparent emphasis on the utilization of local material (quartz) for hafted bifaces at 38RD158 during the Mississippian Period may indicate fairly localized, self-sufficient groups. However, nearby sites suggest a fairly high frequency of non-local materials (especially Piedmont materials) utilized for arrow point manufacture during this period. Consequently, the high incidence of quartz arrow points at 38RD158 may simply reflect the availability and expedient use (as indicated by little evidence of resharpening-retipping) of quartz at this particular site and, therefore, does not necessarily reflect the broader aspects of the Mississippian settlement system. In fact, the hafted bifaces data indicate that Mississippian utilization of 38RD158 was oriented toward a rather narrow range of activities (probably seasonal) involving the manufacture and use of quartz arrow points for hunting. The near absence of other artifacts that can be reasonably attributed to the Mississippian utilization of the site supports this inference.

Quartz Cobbles and Cobble Fragments

Subsumed under this general category are: (1) Quartz cobbles and cobble fragments with cortex; and (2) angular quartz fragments without cortex. Sub-category 1 may include fire-cracked rock, an output of "hot rock" cooking in earth ovens or by stove boiling. It must be noted that it is difficult to distinguish heat-induced cracking and discoloration (reddening) in that these attributes may be very similar in appearance in unmodified quartz. Sub-category 2 may include quartz that has been broken through: cultivation; frost action (weathering); hammerstone collapse; or core reduction (shatter). Again, the resulting breakage patterns may be similar and difficult to distinguish. The problem is compounded by the likelihood that one or more of these agencies often contributed to the breakage pattern observed on a given specimen. A complete discussion of these sub-categories and the problems involved in deriving behaviorally meaningful patterns may be found in House and Wogaman (1978). Because of the interpretive problems discussed above, the only attributes considered for these sub-categories are number and weight by provenience (Appendix IE).

Based solely on the presence of large quantities of material (Appendix IE) attributed to each of these sub-categories, some general inferences may be drawn for 38RD158 with respect to site function. These inferences are consistent with those derived from the other artifact categories and include:

1. Quartz raw material was available and procured at, or within the immediate vicinity of, the site.

2. Initial reduction of quartz raw material occurred at 38RD158.

3. Relative to other lithic materials, quartz was most heavily utilized, at least for certain activities.

4. The large quantities of these materials, including at least some fire-cracked rock, possibly indicative of cooking, suggest that the site was heavily utilized during one or more periods of prehistory by populations exhibiting at least a degree of sedentism.

Other Lithic Artifacts

Included in this category are lithic artifacts that appear to be minimally represented at 38RD158 (Appendix IF). These include: steatite and micaceous schist sherds; a pipe or bead fragment of metamorphosed rock; and a handstone of igneous/metamorphic rock. All these artifacts are of Piedmont raw material.

Although the presence of the pipe or bead fragment is significant in terms of evaluations of site function, there is little additional information that can be obtained from the artifact itself. The steatite and micaceous schist sherds are too small to determine vessel size, but local forms are suggested.

The wear patterns exhibited on the handstone indicate multifunctional use as a grinding implement (flat, grinding surfaces indicative of plant or nut processing?) and as a "hammerstone" (indicated by edge battering). Although the battering indicates contact with another rock, it is unclear whether the use-wear resulted from reducing lithic material (use as a hammerstone) or from food processing (use analogous to a "pestle"). If the grinding surfaces resulted from plant or nut processing, then the edge battering would more likely have resulted from related activities, i.e. use as a "pestle."

Based on these limited observations and low-level inferences, a number of functional inferences may be drawn. Again, these inferences are in general agreement with those earlier and include:

1. The relative scarcity of these artifacts at the site, the lack of manufacturing debris associated with these materials, and their typical occurrence as small fragments, suggests that the raw materials are of non-local origin and that the artifacts were highly curated.

2. Collectively, these artifacts suggest that food procurement, processing, and/or storage activities occurred at the site. These activities, and the relatively non-portable nature of the stone bowls and handstone, support the view that a degree of sedentism is indicated for 38RD158 during one or more periods of prehistory. The occurrence of a pipe or bead fragment at 38RD158 further supports this view in that "exotic" items are more likely to be present (discarded) in a permanent or semi-permanent site context (Schiffer 1976).

Ceramics

The variables recorded for the ceramics are surface treatment and temper (Appendix IG). Although these variables may have functional implications, they have been used primarily, in conjunction with stratigraphic context, for chronological differentiation in the southeastern United States (e.g. Williams 1968). Variables pertaining to vessel morphology (e.g. size, shape, rim form, etc.) are probably the best functional indicators (Shepard 1968). Unfortunately, the ceramics recovered from 38RD158 are sherds too small to quantify these variables, necessitating a subjective evaluation.

Surface treatment includes plain, check stamped, simple stamped, fine cord-marked, fine fabric-impressed, rectilinear complicated stamped, incised, and unidentifiable decorated. All surface treatments are characterized by "sloppy" execution. The temper is fine to coarse quartz sand.

Vessels are typically thin-walled (sherds range from .4 - .7 cm) with a variety of rim forms. Together, these data suggest primarily bowl and possibly jar forms of relatively small size. A few, large conical-shaped vessels may also be represented.

In nearly all respect, the ceramics from 38RD158 are identical with those fully described by Stuart (1975) for the middle Wateree Valley, South Carolina. Stuart suggests a Late Woodland context for the ceramics, possibly at a Mississippian time level. This would certainly be consistent with the inferences derived from the other artifact categories represented at 38RD158.

It may be inferred from the ceramic data that a variety of activities related to food procurement, processing, and possibly storage occurred at 38RD158 during Late Woodland times. These activities, and the relatively non-portable nature of ceramic vessels, suggest a degree of sedentism during this period.

TEMPORAL IDENTIFICATION

Introduction

The archeological material recovered from 38RD158 ranges in time from the Early Archaic through the Mississippian Period. In the absence of stratigraphic context at 38RD158, other means of temporal identification are necessary in order to derive the artifact assemblages associated with the various periods. Temporal identification may be accomplished through: cross-dating artifacts recovered at 38RD158 with similar artifacts recovered in dated, stratigraphic context elsewhere; comparing artifacts recovered at 38RD158 with similar artifacts that repeatedly occur at other sites in apparent association with artifacts diagnostic of specific temporal periods, though not in dated, stratigraphic context; and correlating specific lithic raw materials with temporally diagnostic lithic artifacts. These comparative techniques will provide the basis for reconstructing temporal variability in artifact assemblages at 38RD158, beginning with the Early Archaic (Table 1).

TABLE 1

	General Cultural Chronology	Temporally Diagnostic Bifaces From 38RD158
2000	Historic	
	South Appalachian	
	Mississippian	Caraway
A.D. 1000	Late Woodland	Yadkin
0	Middle Woodland	
	Early Woodland	Swannanoa
		Bradley Spike
1000		Otarre
2000	Late Archaic	Savannah River
3000		Guilford
B.C. 4000	Middle Archaic	Morrow Mountain
5000		
6000		
7000	Early Archaic	Palmer
8000	Paleo-Indian	Dalton

The Early Archaic

Artifacts specifically diagnostic of the Early Archaic are confined to hafted bifaces (Table 1). These include one Dalton of flow-banded rhyolite and three Palmers; two of quartz and one of silicate.

Based on the raw materials utilized in the manufacture of these artifacts, it is probable that at least some debitage of these raw materials at 38RD158 is attributable to the Early Archaic. Debitage of other raw materials at 38RD158 may also be Early Archaic. Anderson (1978) notes that Early Archaic tool forms in this area of the Fall line and Peidmont are most likely to be of quartz, coastal plain chert, and various rhyolite. Other raw materials that appear to have been used to a lesser degree, and that occur as debitage at 38RD158, include silicates, orthograde quartzite, and opaque ridge and valley chert.

The modified, unifacial flake tools from 38RD158 are probably Early Archaic. Tools of this form are most commonly associated with the Early Archaic in South Carolina (House and Ballenger 1976; House and Wogaman 1978; Cable, Cantley and Sexton 1978; Taylor and Smith 1978). The raw materials (quartz and opaque ridge and valley chert) from which these tools were manufactured support this inference.

Finally, based on raw material, the unmodified flake tools of flow-banded rhyolite and coastal plain chert may also represent Early Archaic utilization of site 38RD158. However, this is inconclusive, since the only temporally diagnostic artifacts of coastal plain chert, for example, are attributable to the Late Woodland and Mississippian Periods.

The Middle Archaic

Artifacts diagnostic of the Middle Archaic are confined to three quartz Morrow Mountain and two quartz Guilford hafted bifaces (Table 1). The heavy reliance on quartz for the manufacture of these bifaces suggests that much of the quartz debitage, and probably some of the quartz flake tools, at 38RD158 are attributable to the Middle Archaic. Similarly, the quartz blanks and "other" bifaces are probably Middle or Late Archaic. Quartz bifaces such as these appear to occur most frequently in Middle and Late Archaic contexts in this area of the South Carolina Piedmont (House and Ballenger 1976; House and Wogaman 1978; Taylor and Smith 1978; Cable, Cantley and Sexton 1978). Further, because the blanks indicate early stage biface reduction and the "other" bifaces indicate tool use and maintenance, it is probable that the entire sequence of quartz reduction (primary decortication-resharpening flakes) occurred at 38RD158 during the Middle Archaic.

The Late Archaic

Artifacts occurring at 38RD158 that are diagnostic of the Late Archaic include three quartz Savannah River bifaces (Table 1), four steatite sherds, one micaceous schist sherd, fire-cracked rock (some of the quartz cobbles and cobble fragments were probably associated with hot-rock cooking), and probably some of the quartz blanks and "other" bifaces (Coe 1964; Keel 1976; House and Ballenger 1976; House and Wogaman 1978; Cable, Cantley and Sexton 1978; Taylor and Smith 1978).

As with the Middle Archaic, quartz (local raw material) appears to have been the dominant lithic raw material utilized at 38RD158 during the Late Archaic. From this it might be inferred that some of the quartz flake tools are probably Late Archaic. Further, assuming that at least some of the quartz blanks and "other" bifaces are attributable to the Late Archaic, then it is probable that the entire sequence of quartz reduction (primary decortication-resharpening flakes) occurred at 38RD158 during this period.

Other artifacts occurring at 38RD158 may also be Late Archaic. Goodyear (Personal Communication) notes that flow-banded rhyolite appears to have been most commonly used during the Late Archaic and Early Woodland. Consequently, some of the debitage and unmodified flake tools of this material could be Late Archaic. However, the only temporally diagnostic artifact (Dalton) of flow-banded rhyolite recovered from 38RD158 was of the Early Archaic. Therefore, based on this temporally diagnostic artifact-raw material correlation at 38RD158, debitage and artifacts of this material may be more likely Early Archaic.

Finally, the ground stone pipe or bead fragment and the handstone are most likely, but certainly not conclusively, Late Archaic. Artifacts such as these are most commonly found in a Late Archaic context (Stoltman 1974; House and Ballenger 1976; House and Wogaman 1978; Cable, Cantley and Sexton 1978; Taylor and Smith 1978).

The Early Woodland

The only artifacts diagnostic of the Early Woodland are two Otarre hafted bifaces (Table 1), one of felsic tuff and one of silicate. It is interesting to note, based on the lithic raw materials utilized in biface manufacture, that the Early Woodland marks a major shift away from the use of local raw material (quartz) at 38RD158. This trend continues through the Woodland Period and, to a lesser extent, into the Mississippian, with silicates Coastal Plain chert and orthograde quartzite becoming the prevalent raw materials utilized in biface manufacture. Consequently, most of the debitage (largely bifacial thinning and resharpening flakes), unmodified flake tools, and the few blanks and "other" bifaces of these non-local raw materials are probably Woodland.

The Middle Woodland

Artifacts diagnostic of this period are confined to hafted bifaces. These are one Swannanoa of quartz and one Bradley Spike of silicate (Table 1). See the previous discussion of the Early Woodland for other artifacts, raw materials and debitage at 38RD158 that are most likely attributable to the Middle Woodland.

The Late Woodland

The ceramics and Yadkin bifaces recovered from 38RD158 are diagnostic of the Late Woodland. Four of the bifaces are made of coastal plain chert, one of silicate, and one of orthograde quartzite. Based on Stuart (1975), the ceramics are attributable to a Late Woodland context, possibly at a Mississippian time level. Consequently, at least some of the ceramics could be temporally associated with the Caraway triangular points (Mississippian) at 38RD158. Other artifacts, raw materials and debitage that are likely associated with the Late Woodland utilization of 38RD158 have been discussed in the Early Woodland section.

The Mississippian

Mississippian utilization of 38RD158 is represented by Caraway hafted bifaces (Table 1). These bifaces (probably arrow points) were manufactured from quartz (9), silicate (2), coastal plain chert (1), and orthograde quartzite (1).

Based on the raw materials utilized in biface manufacture, it would appear that the same non-local raw materials utilized throughout the Woodland Period continued to be utilized during the Mississippian though relatively less frequent. The reduction in the frequency of use of non-local raw materials during the Mississippian Period is due to a relative increase in the utilization of local raw material (quartz). Consequently, it is likely that the entire sequence of quartz reduction (primary decortication-resharpening flakes) occurred at 38RD158 during the Mississippian Period, in a manner similar to the Middle-Late Archaic. It is conceivable, therefore, that some of the temporally non-diagnostic artifacts of quartz, that are thought most likely to be Archaic, could in fact be Mississippian. Similary, some debitage (primarily bifacial thinning and resharpening flakes) and temporally non-diagnostic lithic artifacts of non-local raw materials (silicate, coastal plain chert and orthograde quartzite) may be Mississippian rather than Woodland.

Finally, as discussed earlier, at least some of the ceramics that have been attributed to the Late Woodland could be Mississippian. Further, although no temporally diagnostic artifacts of opaque and translucent.

ridge and valley chert were recovered from 38RD158, some debitage (represented primarily by bifacial thinning flakes) of these non-local raw materials was present and could represent Mississippian utilization of the site. Goodyear (personal communication) notes that in this area of the Fall line and Piedmont opaque ridge and valley chert seems to have been used most frequently during the Early Archaic, but was also used for arrow point manufacture during late prehistoric (Mississippian) times. Artifacts of translucent ridge and valley chert, however, occur most frequently as Mississippian arrow points.

SPATIAL PATTERNING OF ARCHEOLOGICAL MATERIAL AT 38RD158

Introduction

In the previous Section an attempt was made through various comparative techniques to construct the artifact assemblage associated with each temporal period. Although the reconstructions are probably adequate for deriving general patterns, in most instances, it is not possible to determine with certainty what specific artifacts, raw materials, debitage, etc., are attributable to a given temporal period. That is, most of the archeological materials do not cluster as discretely in time as desired, resulting in "probable" and "possible" assignments for each temporal period. Consequently, conclusions (pertaining to temporal variability in site activities) derived from the spatial examination of what are largely temporally non-diagnostic artifacts would be misleading. Therefore, only temporally diagnostic artifacts will be examined spatially. Although this will be of limited value for deriving the specific activities that occurred at 38RD158, it should provide some insight into the use of space over time. These spatial data, in conjunction with the functional inferences derived from the various artifact categories (Section V) and the artifact assemblage reconstruction by time period (Section VI), should be adequate generally for determining temporal variability in site activities and site function (Section VIII).

Although temporally diagnostic artifacts are not confined to hafted bifaces, this is the only category containing artifacts specifically diagnostic of each prehistoric period represented at 38RD158. In order to maintain a degree of comparability, therefore, only the temporally diagnostic hafted bifaces will be examined spatially. It should be noted, however, that even the hafted biface data are probably not entirely comparable, making a degree of bias inevitable. In this regard, at least two factors should be considered in interpreting these spatial data.

First, considering the size of that portion of the site examined during Stage II (supplemental testing) in comparison with the relatively few, small, dispersed excavation units, the spatial patterning observed for the hafted bifaces is likely indicative only of general spatial trends over that area of the site. By contrast, the contiguous, or nearly contiguous, excavation units in the block area (Stage I) allow more detailed observations of spatial patterning, though only for a relatively small area.

Second, differential cultivation and artifact collecting by amateur archeologists over the past twenty years probably had a major effect on the spatial distribution and relative densities of the hafted bifaces. That is, some areas of the site were likely cultivated more frequently than others and would, therefore, be more intensively collected over time. Additional bias would result from the tendency for collectors to save only the hafted bifaces and other "exotic" items. Ceramics and debitage are seldom collected. Even the bifaces themselves are often differentially collected with, for example, the earlier biface forms being saved (at least the complete ones) and the late period traingular points being ignored. With these factors in mind, the spatial distribution of the temporally diagnostic hafted bifaces recovered from 38RD158 will now be considered, starting with the Early Archaic.

The Early Archaic

As indicated by Appendix IIa, the relatively few Early Archaic hafted bifaces (1 Dalton, 3 Palmers) occur in the central portion of the area investigated. The artifacts are sparsely distributed over an area approximately 30 meters northwest-southeast and 10 meters northeast-southwest, roughly parallel to the bluff-edge overlooking Gills Creek and associated bottomland. It may be significant that the artifact distribution is back from the bluff-edge rather than immediately overlooking the creek-bottomland. This may suggest that upland resources (e.g. acorns, hickory nuts and deer), as compared with those associated with the adjacent creek-bottomland, were being emphasized at 38RD158 during the Early Archaic. In this regard, the artifact assemblage reconstructed for the Early Archaic (Section VI) is very similar to Early Archaic assemblages encountered at upland, inter-riverine sites in this area of the Piedmont. As with 38RD158, these upland sites typically contain low densities of archeological material scattered over relatively small areas along ridgetops. From this and the assemblage data, it may be inferred that upland Early Archaic sites, possibly including 38RD158, were utilized on a short-term, seasonal basis by small groups exploiting and processing a relatively narrow range of subsistence resources at, or within the immediate vicinity of, the site (House and Ballenger 1976; House and Wogaman 1978; Cable, Cantley and Sexton 1978; Taylor and Smith 1978).

The Middle Archaic

The spatial patterning of temporally diagnostic Middle Archaic bifaces (3 Morrow Mountains, 2 Guilfords) is similar to that of the Early Archaic (Appendix IIb). However, there are two notable differences.

First, the Middle Archaic bifaces are more restricted in their spatial distribution, being confined solely to the block excavation area (8x8 meters). Second, the Middle Archaic hafted bifaces occur in higher frequency (total numbers) and greater density (artifacts per unit of area) than those of the Early Archaic.

These data suggest more spatially concentrated activities during the Middle Archaic and possibly the more intensive utilization of space and/or resources. Nevertheless, as with the Early Archaic, the use of limited space and the relatively low Middle Archaic biface density is indicative of short-term, seasonal utilization by small groups exploiting a relatively narrow range of subsistence resources.

The Late Archaic

The spatial distribution and density of the Late Archaic hafted bifaces is virtually identical with the Early Archaic (compare Appendices IIa and IIc). From this, we might infer that the Late Archaic utilization of 38RD158 represents similar activities, possibly related to the exploitation of upland resources. However, when the Late Archaic assemblage data (Section VI) as a whole is considered, there appear to be significant differences between Early and Late Archaic utilization of the site. The much broader range of artifacts attributable to the Late Archaic may indicate either the more intensive exploitation of similar resources or, possibly, and more likely, the exploitation of a broader range of resources, including those associated with the adjacent creek-bottomland. Further, the presence of stone vessel fragments and possibly fire-cracked rock, attributed to the Late Archaic utilization of 38RD158, is taken not only as indicating a relatively broad range of activities, but also as indicating a degree of sedentism, at least on a seasonal basis (House and Ballenger 1976; House and Wogaman 1978). A degree of sedentism during the Late Archaic at 38RD158 may be positively correlated with the heavy reliance on local lithic raw material (quartz) during this period.

The Early Woodland

The spatial patterning of Early Woodland hafted bifaces (Appendix IId) is similar to that of the Early and Late Archaic. However, the Early Woodland bifaces (2 Otarre) occur in lower density than either the Early or Late Archaic bifaces. A comparison of these spatial data with the Early Woodland assemblage data (Section VI) may be instructive. Other than the Otarre hafted bifaces and possibly some of the tools and debitage (primarily of non-local lithic raw material), very little of the archeological material recovered from 38RD158 could be reasonably attributed to the Early Woodland. Therefore, the spatial patterning, the relatively few artifacts, the relatively low artifact diversity, and the possible tendency for hafted bifaces to be made of non-local raw material suggests an overall Early Woodland pattern at 38RD158 most similar to the Early Archaic. This pattern likely involved infrequent, short-term utilization of the site, probably for exploiting a narrow range of seasonally available subsistence resources.

The Middle Woodland

The Middle Woodland hafted bifaces (1 Swannanoa, 1 Bradley Spike) are confined solely to the block excavation area (Appendix IIe). This spatial distribution is most similar to the Middle Archaic. However, the low artifact density, the low artifact diversity, and a possible emphasis on non-local lithic raw materials suggest that the Middle Woodland utilization of 38RD158 was most similar to the Early Woodland and the Early Archaic.

The Late Woodland

The spatial patterning of the Late Woodland hafted bifaces is quite different from that of the earlier periods (Appendix IIf). There are three areas of apparent biface concentration. One is the block excavation area. The other two areas are located in the extreme northwest portion and in the extreme east-central portion of the area investigated, respectively.

There are at least two possibilities that may account for this dispersed pattern. One possibility is that three spatially discrete activity areas are represented. A second possibility is that Late Woodland bifaces are distributed, though not necessarily uniformly, between the three concentrations, but were not encountered during Stage II (supplemental testing). The possible failure of Stage II to recover Late Woodland bifaces in the intervening areas would be due most likely to the small, widely dispersed subsurface sample units employed, in conjunction with relatively lower densities of Late Woodland bifaces in these areas. Consequently, the three areas containing Late Woodland bifaces probably do represent relatively higher biface densities, with intervening areas likely containing relatively lower densities.

The above spatial patterning suggests that a number of activity areas (possibly reflecting specialized activities) attributable to the Late Woodland are present at 38RD158. From this, in conjunction with the considerable artifact diversity (including ceramics), the relatively high artifact density, and an emphasis on non-local lithic raw materials (possibly reflecting specialized activities), it may be inferred that 38RD158 was utilized rather intensively during the Late Woodland, possibly in a manner similar to the Late Archaic. A wide range of specialized economic activities, reflecting the procurement and processing of a broad range of subsistence resources, and at least a degree of sedentism may also be inferred. Although more tenuous, it might be inferred that creek-bottomland resources were emphasized. This riverine-associated environment produces a broader range of high density resources, both yearround and seasonal (late winter through summer), than adjacent upland areas (Odum 1971; Shelford 1963).

The Mississippian

The Mississippian hafted bifaces (Caraway triangular points) are distributed in a manner similar to the Late Woodland hafted bifaces (compare Appendices IIf and IIg). There are two apparent spatial concentrations of Mississippian hafted bifaces. One is located in the excavation block area and the other in the northwest portion of the site area investigated. The overall spatial pattern suggests a relatively low density, though somewhat variable, of Mississippian bifaces over an area approximately 50 meters northwest-southeast and 10 meters northeast-southwest. The apparent lack of Mississippian bifaces in the central portion of this 50x10 meter area is probably due to reasons discussed above for the Late Woodland. As is generally the case with the earlier temporal periods, the Mississippian hafted bifaces appear to be distributed roughly parallel to, but back from, the bluff-edge overlooking Gills Creek and associated bottomland.

Based solely on the spatial distribution and the relatively higher frequency of Mississippian bifaces, in comparison with earlier periods, it might be inferred that the Mississippian utilization of 38RD158 was fairly intensive, possibly with a degree of sedentism involving a broad range of economic activities. However, the assemblage data (Section VI) suggest low artifact diversity for the Mississippian Period, which is not indicative of sedentism or a broad range of economic activities.

These conflicting data may be a result of our present inability to adequately identify the range of Mississippian artifacts. As discussed in Section VI, at least some artifacts that have been attributed to other temporal periods could in fact be Mississippian. If this is the case, the Mississippian utilization of 38RD158 may be more substantial than presently indicated.

CONCLUSIONS, CONTRIBUTIONS AND RECOMMENDATIONS

Introduction

In this final section conclusions will be drawn based on the artifactual (functional, temporal and spatial) and environmental-ecological data presented in previous sections. These conclusions are in terms of our stated research goals which are, from a temporal perspective, to infer: the range of prehistoric behavioral activities that occurred at a portion of 38RD158, as reflected by the data recovered; and site function(s) within a broader regional context. The nine criteria set forth by House and Wogaman (1978) for intensive habitation will be used as a means of evaluating our conclusions. The contributions of 38RD158 to single site and regional research will be discussed and long-term management recommendations presented.

Conclusions

According to the settlement model presented in Section II (based on environmental, ecological and ethnohistoric data) it was predicted that upland, inter-riverine areas were utilized by prehistoric populations primarily during the fall and early winter for the procurement of acorns, hickory nuts and deer. We would expect archeological sites resulting from the exploitation of this relatively narrow range of seasonally available subsistence resources to have been utilized on a sporadic, short-term basis. From this, we would also expect such sites to exhibit low artifact density and diversity (due to the narrow range of activities being performed), with tool use and maintenance, rather than manufacture, indicated by the artifacts and debitage. Further, with the temporary nature of these sites, we would not normally expect evidence of structures, features, and relatively non-portable items such as vessels (ceramic or stone).

By contrast, the riverine zone (including associated bottomland, river swamps and major tributaries) contains a much broader range of subsistence resources (Section II). These resources are available, often in high densities on a yearround or seasonal (late winter through summer) basis. Consequently, many riverine areas could support permanent or nearly permanent settlement, with archeological evidence of intensive habitation. House and Wogaman (1978) suggest that this evidence should include: (1) midden staining, (2) features, (3) steatite-ceramic sherds, (4) abundant fire-cracked rock, (5) a wide variety of tool forms, (6) a wide variety of debitage from tool manufacturing and maintenance, (7) early stage debitage from non-local raw material, (8) high densities of diverse tools and debitage in some portions of the site, and (9) a favored location with adequate, fairly level living space close to water.

Although this dichotomy of the environment (riverine vs inter-riverine) is useful in a heuristic sense, by itself it has little interpretive value for sites situated on riverine-inter-riverine ecotones (e.g. 38RD158). However, when the archeological data from 38RD158 is considered, it should be possible to reasonably infer temporal variability in the environment(s) exploited, the probable activities involved, and site function(s). It is expected that these inferences will be supported and strengthened when considered in light of the above criteria for intensive habitation.

If the artifact categories and spatial data alone were considered, it would have to be concluded that 38RD158 exhibits evidence of fairly intensive utilization (habitation). Of the criteria for intensive habitation, only midden staining and features appear to be absent. As discussed earlier, this may be accounted for by the intensive 20th century cultivation of the site.

However, when temporal identification of artifacts is considered it becomes apparent that there was considerable variability over time in intensity of habitation at 38RD158. Much of this temporal variability in intensity of habitation is directly related to changes in site activities and function(s), probably due in part to changes in the environment(s) and resources exploited. These changes may be evaluated through a consideration of temporal variability in artifacts present, their probable function, and their spatial distribution.

When considering these data (presented in previous sections), a narrow range of activities involving hunting, butchering, tool maintenance, and possibly some quartz tool manufacture is indicated for the Early Archaic at 38RD158. It is also indicated that the site probably functioned as a short-term, hunting camp utilized by small, highly mobile groups during their seasonal rounds. Thus, during the Early Archaic, Site 38RD158 exhibited a low intensity of utilization-habitation and, based on artifact assemblage similarities with Early Archaic inter-riverine Piedmont sites, probably functioned as an upland, deer hunting camp. Only criterion nine (favorable location) is met by the Early Archaic data from 38RD158, supporting the inferred low intensity of utilization-habitation during this period.

The Middle Archaic utilization of 38RD158, as indicated by the archeological data, appears to be very similar to the Early Archaic. However, more intensive utilization-habitation of the site is indicated, possibly by larger, less mobile groups.

The inference of more intensive utilization-habitation of the site during the Middle Archaic is supported by a consideration of the criteria for intensive habitation. On a comparative basis with the Early Archaic, four of the nine criteria are met. During the Middle Archaic there appears to be: (1) a wider variety of tool forms, (2) a wider variety of debitage from tool manufacturing and maintenance, (3) a relatively higher density of diverse tools and debitage in some portions of the site (as suggested by the spatial distribution of the hafted bifaces), and (4) selection of a favored location.

The archeological data indicate major changes in the utilization of Site 38RD158 during the Late Archaic. A wide variety of economic activities are suggested. These include: (1) the manufacturing, use and maintenance of quartz tools, (2) the procurement and processing of both plant and animal resources, and (3) cooking and possibly food storage.

From these activities, it may be inferred that during the Late Archaic 38RD158 functioned as a habitation site, at least on a seasonal, and possibly multi-seasonal, basis. In comparison with the Early and Middle Archaic, larger population concentrations and the exploitation of a broader range of subsistence resources is also indicated. The Late Archaic artifact assemblage is like that described by House and Ballenger (1976) for riverine sites. This is consistent with our interpretation that the artifact assemblage reflects the exploitation of a broad range of resources. It would also indicate that the site was most likely utilized during the period from winter through summer and possibly, based on its ecotonal location, yearround.

That the site represents fairly intensive habitation during the Late Archaic is further indicated by a comparison of the archeological data with the criteria for intensive habitation. At least five of the nine criteria are met. These are the presence of: (1) steatite sherds, (2) fire-cracked rock, (3) a wide variety of tool forms, (4) a wide variety of debitage, and (5) a favorable location.

By contrast, the utilization of 38RD158 during the subsequent Early and Middle Woodland periods, appears to represent activities and a site function(s) most similar to the Early and Middle Archaic. The archeological data suggest a narrow range of activities involving hunting and butchering and that the site functioned as a temporary, seasonal camp infrequently utilized by small groups exploiting a narrow range of resources.

Because of the ecotonal location of the site, it cannot be said with certainty whether or not riverine or inter-riverine resources were being exploited during the Early and Middle Woodland periods. However, when the assemblage data are considered, in view of the fact that fairly substantial Early and Middle Woodland riverine habitation sites are known to exist in the area, it is likely that 38RD158 represents an upland, deer hunting camp. If this is true, then it is probable that Early and Middle Woodland populations inhabiting riverine areas dispersed into small groups during the fall and established a series of short-term, nut collecting and deer hunting camps in adjacent, upland inter-riverine areas. It is suspected that 38RD158 represents such a camp during this period.

The low intensite of utilization-habitation suggested for 38RD158 during the Early and Middle Woodland periods is further indicated by a comparison of the archeological data with the criteria for intensive habitation. Like the Early Archaic, only the criterion of favored location is met.

For the Late Woodland, the archeological data suggest that 38RD158 was utilized in much the same manner as the Late Archaic and probably represents a fairly permanent, riverine habitation site. At least six of the nine criteria for intensive habitation are met. These are the presence of: (1) ceramic sherds,

(2) a wide variety of tool forms, (3) a wide variety of debitage, (4) early stage debitage from non-local raw material (mostly late stage but some early), (5) high densities of diverse tools and debitage in some portions of the site (as indicated by the hafted biface distribution), and (6) a favorable location.

Although tenuous, it might be inferred that the Late Woodland represents a more intensive utilization-habitation of the site than the Late Archaic, because at least six of the criteria for intensive habitation are met by the Late Woodland, as compared with five for the Late Archaic. Assuming considerably larger populations by Late Woodland times, as well as the possibility of agriculture, this inference seems reasonable.

The Mississippian utilization of the site appears to be most like that of the Early and Middle Archaic and the Early and Middle Woodland periods. A narrow range of activities involving primarily hunting and butchering, probably deer, is indicated. Although the activities and site function(s) are probably similar to those for the above mentioned periods, comparatively speaking, the relatively higher densities and wider spatial distribution of material (as indicated by the hafted bifaces) suggests that the site was more frequently or intensively utilized during the Mississippian period.

This inference is supported by a comparison of the archeological data with the criteria for intensive habitation. It is probable that at least two of the criteria are met for the Mississippian utilization of the site. These are: (1) a wider variety of debitage (both local and non-local), and (2) favorable location.

Finally, the function of 38RD158 within the broader Mississippian settlement system, based on other Mississippian sites in the area, was probably similar to that of the Early and Middle Woodland periods discussed earlier. However, assuming that prehistoric populations were largest during the Mississippian period, we might expect both riverine and inter-riverine sites to exhibit more intensive utilization than their earlier counterparts. This may explain why 38RD158 was apparently more intensively utilized during the Mississippian period than during the Early and Middle Archaic and the Early and Middle Woodland, although the activities and site function(s) were probably very similar.

Contributions

The excavations at 38RD158 have contributed to both single site and regional level research. At the site level, our work at 38RD158 has demonstrated that sites can provide useful data even in the absence of stratigraphic context. It also demonstrated that the techniques employed were generally adequate for recovering the desired data and should, therefore, be useful for recovering similar data from other sites. Most important, however, is that this research has provided a body of data that may be useful for refining existing models of past human behavior and for constructing new ones.

At the regional level, the excavations at 38RD158 have clearly demonstrated that the existing riverine-inter-riverine model is inadequate for explaining the range of prehistoric settlement variability. Although this model is probably adequate at a general level, it does not take into account, for example, sites situated on riverine-inter-riverine ecotones (e.g. 38RD158). As this research indicates, the utilization of 38RD158 varied over time, with riverine resources probably emphasized during the Late Archaic and Late Woodland periods, and inter-riverine resources during the remaining periods. Thus, the model is inadequate for its intended purpose of predicting site activities/function(s) based on environmental setting, and, for explaining the temporal variability observed. Therefore, future efforts to refine this model should probably incorporate variables that are not strictly environmental-ecological. Assuming variability over time in the size, structure, and organization of human populations, then perhaps a more explicit consideration of demographic variables would be useful.

Management Recommendations

Given the relatively large areal extent of the site, it would be desirable to intensively examine other portions of the site prior to any future construction. In this way it would be possible to determine if, and to what degree, the patterns delineated in this research are representative of the entire site. Because the present research indicates that most of the site has been under intensive cultivation and is, therefore, not likely to contain undisturbed deposits, controlled surface collections (following cultivation and rain) should be adequate in these areas. However, as also indicated by this research, it would appear that small portions of the site margin, in and adjacent to wooded areas, are undisturbed, at least the basal deposits. The relatively intensive habitation of the site during the Late Archaic and Late Woodland periods makes it highly likely that evidence of structures and other subsurface features do exist in these areas and could, therefore, be discovered and separated stratigraphically through excavation.

APPENDIX I(A)

HISTORIC-MODERN MATERIAL
Block Excavation Units

Provenience	Clear Glass	Light Green	Green (7-Up)	Dark Green (Wine)	Light Purple	White (Milk)	Brown Glass	Clear Window Glass	Copper Wire	Wire Nails	Iron Fencing Staples	Iron Nuts	Sheet Metal	Unident. Iron	Wrought Nail	Shoe Leather	Coal	Linoleum	Cigarette Filter	Slate Pencil	Buckshot	.22 Caliber Slug	.32 Caliber Slug	.38 Caliber Slug	.44 Caliber Slug	Unglazed Red Earthenware	Alkaline Glazed Stoneware	Ironstone White Ware	Cream Paste Black Glazed Earthenware	Brick Frags	Brick Weight (Grams)	TOTALS
(N23,W25) Level B					2							1																				3
(N16,W25) Level A													1																	3	2.5	4
(N16,W25) Level B																														1	1.5	1
(N16,W25) Level C																	9													8	397	17
(N16,W25) Level D		2															24													2	1.5	28
(N16,W32) Level A										1	1																			2	28.5	4
(N16,W32) Level B	1																	1												1	1.0	3
(N16,W32) Level C										1																						1
(N23,W32) Level B																														1	2.5	1
(N23,W32) Level C					1																								1			2
(N22,W25) Level B	1																													1	4.5	2
(N22,W25) Level C																														1	.5	1
(N21,W25) Level A	1								1																							2
(N21,W25) Level B						1				1																						2
(N21,W25) Level C																														3	3.5	3
(N20,W25) Level A													1		1																	2
(N20,W25) Level B																	1													2	1.0	3
(N20,W25) Level C																														9	14.5	9
(N19,W25) Level A																		2												2	110	4
(N19,W25) Level B			1	1																												2
(N19,W25) Level C																														6	829	6
(N19,W25) Level D																	3													2	312	5
(N18,W25) Level A																	1					1		1								3
(N18,W25) Level B	1																	1			1					1				1	1.0	5
(N18,W25) Level C	1					1								1			1													3	4.5	7
(N18,W25) Level D										1			2				6													1	3.5	10
(N17,W25) Level A																														5	6.5	5
(N17,W25) Level B	1												2	1			3										1			4	3.0	12
(N17,W25) Level C	1												6				1													2	1.0	10
(N17,W25) Level D	2	2		1									3	2			15													30	646	55
(N16,W26) Level A	1	1						1										1												5	116	9
(N16,W26) Level B	1																													3	34	4
(N16,W26) Level C																														1	1.5	1
(N16,W26) Level D													1				1													1	2.0	3
(N16,W27) Level A	2												1				1				1			1								6
(N16,W27) Level B	2																													3	35	5
(N16,W27) Level C										2																						2
(N16,W27) Level D	2																2													1	1.0	5
(N16,W28) Level A																														2	.5	2
(N16,W28) Level C	2													1																2	3.0	5
(N16,W28) Level D														1																1	.5	2
(N16,W29) Level A	3				1		2			1							1					1								1	5.0	10
(N16,W29) Level C										1							2													4	12.5	7
(N16,W29) Level D										1			2																	1	.5	4
(N16,W29) Level E										2																						2
(N16,W30) Level A	3									1													1									5
(N16,W30) Level B	1													1									1							2	2.0	4
(N16,W30) Level C				1									1							1										3	3.5	6
(N16,W30) Level D										1							2															3
(N16,W30) Level E																	1															1
(N16,W31) Level A														1																1	1.0	2
(N16,W31) Level B	3													2																1	1.0	6
(N16,W31) Level C		1																														1
(N16,W31) Level D														1																		1
(N16,W31) Level E										1																						1
(N23,W26) Level A	1					1																		1						1	3.0	4
(N23,W26) Level B	2				1					1			2				1															7
(N19,W26) Level A	1									1																				3	2.0	5
(N19,W26) Level B																														1	1.5	1
(N19,W26) Level D																														2	3.0	2
(N17,W28) Level A	1												1																	1	.5	3
(N17,W28) Level B																														5	4.0	5
(N17,W28) Level C																										1				4	5.0	5
(N17,W28) Level D	1																									1				1	22.0	3
(N17,W28) Level E										1													1									2
(N18,W29) Level A						1							1						1													3
(N18,W29) Level B			1		1					1																						3
(N18,W29) Level C																														1	.5	1
(N18,W29) Level D																														1	.5	1
(N20,W29) Level B								1					2																			3
(N20,W29) Level C																	2											1				3
(N20,W29) Level D													1																			1
(N22,W30) Level A																						1			1					2	2.0	4
(N22,W30) Level C										2																						2
(N21,W32) Level B	2													2			1															5
(N19,W31) Level A																														1	7.0	1
(N19,W31) Level C										1																						1
(N22,W28) Level A															1																	1
(N22,W28) Level C																																1
TOTALS	37	6	2	3	6	4	2	2	1	21	1	1	27	14	2	0	78	5	1	1	2	3	2	3	1	3	1	1	1	145		376

APPENDIX I(A)

HISTORIC-MODERN MATERIAL
Grid Subsurface Sample Units

Provenience	Clear Glass	Light Green	Green (7-Up)	Dark Green (Wine)	Light Purple	White (Milk)	Brown Glass	Clear Window Glass	Copper Wire	Wire Nails	Iron Fencing Staples	Iron Nuts	Sheet Metal	Unident, Iron	Wrought Nail	Shoe Leather	Coal	Linoleum	Cigarette Filter	Slate Pencil	Buckshot	.22 Caliber Slug	.32 Caliber Slug	.38 Caliber Slug	.44 Caliber Slug	Unglazed Red Earthenware	Alkaline Glazed Stoneware	Ironstone White Ware	Cream Paste Black Glazed Earthenware	Brick Frags	Brick Weight (Grams)	TOTALS
(N0,W0) Level A																														3	1.5	3
(N0,W0) Level B																														2	1.0	2
(N0,W0) Level C																														1	.5	1
(N8,W8) Level A														1																2	1.0	3
(N8,W8) Level B	2															1														3	19.5	6
(N8,W8) Level C																														1	3.5	1
(N8,W24) Level A								1																						3	3.0	4
(N8,W24) Level B							1						3															1				5
(N8,W24) Level C	1							1																						2	42.5	4
(N8,W24) Level D	2					4							2																	5	1.5	13
(N8,W24) Level E										3				3																		6
(N24,W40) Level B													1																	1	.5	2
(N40,W48) Level B																														1	3.0	1
(N48,W56) Level A						1																										1
(N48,W56) Level B	1						1																									2
(N32,W24) Level A													1																	2	1.0	3
(N32,W24) Level B										1				1																2	4.5	4
(N24,W0) Level A	1	1					1			1							1													3	2.5	8
(N24,W0) Level B	2									1	1																			3	4.5	7
(N24,W0) Level C	1																															1
TOTALS	10	1	0	0	0	5	3	2	0	6	1	0	7	5	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	37		77

APPENDIX I(B)
CHIPPED STONE DEBITAGE
Block Excavation Units

Provenience	Primary Decortication Flakes — Flake Area 1	2	3	4	5	Secondary Decortication Flakes — Flake Area 1	2	3	4	5	Internal Flakes — Flake Area 1	2	3	4	5	Chunks — Flake Area 1	2	3	4	5	Bifacial Thinning & Resharpening Flakes — Flake Area 1	2	3	4	5	Totals For Levels	Totals Per Unit
(N23,W25) A					1Q							3Q 1CPC	1Q	1Q								1Q				8	
B									1Q			2Q	1Q				1Q	2Q	1Q			3Q				11	27
C		1Q	1Q						1Q				2Q		1Q			1Q					1Q			8	
(N16,W25) A		1Q	3Q									6Q	5Q	2Q			5Q	4Q				8Q 2CPC 1S	1Q	1Q		39	
B								1Q				1Q	2Q		1Q		4Q					2Q 1S	2Q 2S			16	104
C		2Q	2Q				1Q										1Q	1Q						2Q		9	
D		1Q		1Q			1Q 1CPC	4Q	1Q			6Q	1CPC 2Q	10Q	1CPC		3Q	3Q	1Q			2CPC 1S 1PR 6Q	3Q			40	
(N16,W32) A		3Q	3Q									1CPC 1S 5Q	3Q 2S				3Q					1CPC 6Q	1CPC 3Q			32	
B		1Q					3Q	1CPC	1Q			5Q	3Q	1CPC 2Q			1Q	3Q				1CPC 1S 7Q	1Q	1Q		32	
C		1Q	2Q				1Q	1Q				1Q						1Q				1Q	1S 2Q			11	
D												2Q	2Q		1Q							1S 1CPC				7	96
E			1Q	2Q						2Q		1Q					2Q					1Q	1Q			10	
F				1Q				1Q	1Q														1S			4	
(N23,W32) A		2Q			1Q		1Q			2Q		3Q	1Q					1Q	1Q			2CPC 8Q	1Q			23	
B		2Q	1Q				1Q	1Q				7Q	2Q	1Q			3Q		1Q			3Q	1Q 1S	1CPC		25	
C		3Q	3Q				1Q	1Q				3Q	1CPC 5Q				2Q	1Q	1CPC			1CPC 5Q	1Q	1PR		29	82
D		1Q						1Q				2Q										1Q				5	
(N22,W25) A			2Q	2Q								5Q	3Q				2Q					3Q				17	
B		4Q	1Q		1CPC		1Q		1Q	1Q		5Q	1Q	3Q			4Q	2Q				10Q	1Q 1S			36	81
C		2Q	1Q				1Q	1Q				2Q	1S 5Q				1Q		4Q			6Q 1CPC	1Q 1S 1CPC			28	

APPENDIX I(B)cont.

Provenience	Primary Decortication Flakes Flake Area 1	2	3	4	5	Secondary Decortication Flakes Flake Area 1	2	3	4	5	Internal Flakes Flake Area 1	2	3	4	5	Chunks Flake Area 1	2	3	4	5	Bifacial Thinning & Resharpening Flakes Flake Area 1	2	3	4	5	Totals For Levels	Totals Per Units
(N16,W26) A								3Q	1Q			3Q	10Q 2Q	1Q				1TRV 3S 3Q				4Q	1Q	1Q	1Q	25	
B		2Q	2Q	1Q				2Q				6Q	3Q					3Q				2CPC 6Q	1S 3CPC			30	
C		1Q						2Q	1Q	2Q		3Q	1Q	1Q				2Q				1CPC	1Q			15	93
D				1Q	1Q		1Q		1Q			10Q 4Q		1Q				2Q	1Q			2Q	1S	1Q		17	
E									1Q									1Q					1CPC 2Q		1Q	6	
(N16,W27) A		2Q	2Q				3Q					8Q	3Q				7Q	1Q				1CPC 1S 9Q	1CPC 1S 2Q			41	
B		1Q						1Q		1Q		4Q						1Q				1PR 2CPC 6Q		1Q		18	
C			1Q	2Q				2Q					2Q				1Q					1S 2Q	1CPC 2Q			14	98
D		4Q					2Q					3Q	1Q	1Q			3Q	2Q				1CPC 7Q	1S			25	
(N16,W28) A		5Q	1Q					1Q				11Q	6Q					1Q			1Q	1CPC 16Q	1Q			44	
B			6Q		1Q		1Q	1Q				1Q	2Q	1PR 1Q				2Q				6Q	1S 4Q			27	
C		1Q	2Q	1Q	1Q		1Q	2Q				5Q	1CPC 1Q	1Q			1Q	1Q				1CPC 2Q	2CPC 2Q			25	117
D							1Q					2Q	2Q	2Q								1S 3Q				11	
E		1Q	1Q		1Q							2Q	1Q				1Q					1S 1Q	1CPC			10	
(N16,W29) A		6Q	4Q	2Q								6Q		1Q				1Q		1Q		1S 2CPC 8Q				32	
B			1Q	1Q					1Q				8Q		1Q			1Q	1Q			4Q	2Q			20	
C			4Q				1Q	2Q				1Q	2Q				3Q	2Q	1Q			1S 7Q	1S 1CPC 10Q 1Q	1Q		29	133
D		1Q	5Q		1Q			3Q	1Q	1Q		4Q	4Q	2Q	1Q		2Q		1Q			3S 6Q	2Q	1FR	1Q	39	
E		1Q	1Q	1Q				1Q					1CPC 1S 1Q				1Q	1Q				1CPC 1Q	2Q			13	

APPENDIX I(B)cont.

Provenience	Primary Decortication Flakes Flake Area					Secondary Decortication Flakes Flake Area					Internal Flakes Flake Area					Chunks Flake Area					Bifacial Thinning & Resharpening Flakes Flake Area					Totals For Levels	Totals Per Units
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
(N16,W31) A			2Q						1Q			1S 1Q	7Q				3Q					1CPC 1Q	1S 2Q			20	
B			4Q				2Q	3Q	1Q			5Q	1Q				1Q	1Q				1S 2Q				21	
C			1Q					1Q				1Q	4Q	1Q				1Q				1FR 1S 2Q	2Q		1Q	16	86
D		1Q	1Q				1Q	2Q										1Q				1Q	1Q			8	
E		1Q	2Q		1Q		2Q					1Q	1Q	2Q			2Q					2CPC	1CPC 4Q			19	
(N23,W26) A			3Q				1Q					1Q	4Q	2Q				3Q	1Q			1S 3CPC 4Q	1S 1CPC 1Q	1Q		27	
B			2Q									3Q			1Q							1FR	1CPC			8	40
C								1Q					1Q									2S	1Q			5	
(N19,W26) A		2Q	2Q		1Q		1Q	2Q	1Q			7Q	1Q		1Q		1Q	1Q				1TRV 1S 3CPC 11Q	3Q			39	
B		2Q	1Q	1Q			2Q	2Q	1S 2Q			4Q	1Q	1Q			3Q	4Q				1FR 2CPC 7Q	2CPC 2Q			38	
C			3Q	1Q			1Q	4Q	1Q	1Q		1Q	3Q									1CPC 3Q	1S 1Q			21	
D			2Q									1Q	2Q	1Q								1Q	1CPC 1Q	1S		10	108
(N17,W28) A		5Q						1CPC	1Q	1Q		10Q	2Q	1Q								2S 17Q	1CPC 1Q			42	
B		1Q	3Q	2Q								4Q	3Q	3Q			2Q		1Q			1S 1CPC 3Q	1Q			25	
C		2Q	2Q	1Q	1Q		1Q					3Q	4Q	2Q								5Q	1CPC 2Q			24	136
D		2Q	4Q	1Q			1Q					20.Q 3Q	3Q	1Q	1Q			1Q				1S 2CPC 5Q	2CPC 1Q	1S		31	
E		2Q	3Q	4Q														2Q		1Q		1Q	1CPC			14	
(N18,W29) A		3Q	3Q				1Q					6Q	4Q	1Q			3Q					1PR 3CPC 7Q	1ORV			33	
B		7Q	9Q	1Q				1Q		1Q		5Q	1Q	1Q	1S		5Q	4Q				1S 3CPC 8Q	2CPC 2Q	1S 1Q		54	

APPENDIX I(B)cont.

Provenience	Primary Decortication Flakes — Flake Area 1	2	3	4	5	Secondary Decortication Flakes — Flake Area 1	2	3	4	5	Internal Flakes — Flake Area 1	2	3	4	5	Chunks — Flake Area 1	2	3	4	5	Bifacial Thinning & Resharpening Flakes — Flake Area 1	2	3	4	5	Totals For Levels	Totals Per Units
(N18,W29) (con't.)																											
C		1Q	3Q					1Q				2Q	6Q	1Q	1FR			1Q				5Q	2Q			23	
D		1Q	1Q		1Q							2Q		1Q				1Q	1Q			2S 2Q	2Q			14	124
(N20,W29)																											
A		3Q	2Q	1Q			3Q	2Q	3Q			5Q	6Q		10.Q		2Q	1Q	1Q	1Q		1S 1CPC 6Q	1CPC 2Q			42	
B		2Q	1Q	2Q			2Q	1Q		1Q		11Q	6Q	1Q			4Q	4Q	2Q			1TRV 1FR 2CPC 3Q	2CPC 3Q			49	
C		3Q			1Q			1Q	1Q			4Q	1CPC 4Q				2Q					1S 4CPC 6Q	1CPC 1Q			30	132
D		1Q					1Q					1Q		1Q	1Q			1Q				2Q	2Q	1Q		11	
(N22,W30)																											
A		1Q	1S 1Q				2Q	1Q				1FR 1CPC	3Q	1Q			4Q	2Q				2S 3CPC 9Q	2CPC 2Q			36	
B		1Q					1Q	2Q	1Q				10.Q 1Q	1Q			3Q	1Q	1Q			3S 7Q	1S 1CPC 2Q			27	73
C			1Q				1Q											2Q	1Q			1S 1FR 1Q	2Q			10	
(N21,W32)																											
A		1Q						1Q					2Q					1Q				3Q	2Q			10	
B		1Q	2Q				1Q	2Q	1S 1Q			1Q	5Q		1Q		7Q	2Q				1FR 1S 5Q	2S 1Q	1Q		35	73
C		4Q	1Q		1Q					1Q		3Q	3Q				4Q					1CPC 1S 6Q	2S 1Q			28	
(N19,W31)																											
A		4Q	5Q	1Q			2Q	1Q	1Q			5Q	1Q	1Q			4Q	2Q				1CPC 1S 6Q	4Q			39	
B		4Q	2Q					1Q	2Q			5Q	1S 5Q				3Q	3Q	1Q			2CPC 10Q	3Q	1FR		43	96
C				1Q				1Q					2Q				3Q	1Q				4Q	1S 1Q			14	
(N22,W28)																											
A		2Q	2Q	2Q			1Q					4Q	3Q	1Q			6Q	2Q				1CPC 1S 3Q	1Q			29	

APPENDIX I(B)cont.

Provenience	Primary Decortication Flakes — Flake Area 1	2	3	4	5	Secondary Decortication Flakes — Flake Area 1	2	3	4	5	Internal Flakes — Flake Area 1	2	3	4	5	Chunks — Flake Area 1	2	3	4	5	Bifacial Thinning & Resharpening Flakes — Flake Area 1	2	3	4	5	Totals For Levels	Totals Per Units
(N21,W25) A			1Q						2Q			3Q	4Q				2Q					4Q 1CPC	1Q 2CPC			20	
B		6Q						1Q				2Q	4Q	1Q			2Q					1S 1CPC 4Q	3Q			25	82
C		1Q	3Q	3Q	1Q		1Q	1S 1Q	2Q	1S		2Q	1CPC 3Q	1Q			3Q					2S 5Q	1Q 1FR 2CPC 1PR	1Q		37	
(N20,W25) A		1Q	3Q	2Q			2Q	1Q		1S 1Q		6Q	7Q	1Q					1Q			1CPC 2Q	1S 2Q			32	
B		3Q	4Q		1Q		2Q		2Q			1S 5Q	2Q	2Q			1Q	2Q				6Q	2CPC 2Q			35	75
C								3Q				2Q						1Q				1CPC			1Q	8	
(N19,W25) A			2Q	3Q			1Q	1Q				1Q		1S 1Q			1Q					5Q	1CPC	1Q 1CPC		19	
B		3Q	2Q									2Q	3Q				4Q					4Q		1Q	1Q	20	60
C		1Q	1Q	1Q	1Q							10Q 1Q	1Q	2Q			1Q	1Q				1Q	1Q			13	
D		1Q	1Q	1Q									1Q									1S 2Q		1S		8	
(N18,W25) A				2Q				1Q	1Q			1CPC 4Q	2Q		1Q		4Q					1Q	1Q			18	
B			1Q					2Q				3Q	1Q	1Q			1Q	2Q	1Q			3S 2CPC 3Q	1CPC			21	
C												7Q	2Q					2Q				1CPC 1S 6Q	1Q			20	63
D		1Q	1Q										1Q									1Q				4	
(N17,W25) A		2Q	1Q	1Q				1Q		1Q		5Q	1S				2Q	1Q	1Q			1S 1FR 1CPC 3Q	2S 3Q	1Q		28	
B		4Q	3Q	3Q				4Q				4Q	4Q	3Q			1Q					1S 4Q	1S 1Q	1Q		34	
C			3Q				1Q						1Q					1Q				1S 1CPC	2CPC			10	102
D			2Q	1Q				2Q	1Q			4Q	1CPC 2Q	1CPC 1Q				2Q	2Q			2CPC 1S 4Q	2CPC 2Q			30	

APPENDIX I(B)cont.

Provenience	Primary Decortication Flakes					Secondary Decortication Flakes					Internal Flakes					Chunks					Bifacial Thinning & Resharpening Flakes					Totals For Levels	Totals Per Units
	Flake Area					Flake Area					Flake Area					Flake Area					Flake Area						
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
(N22,W28) (con't.)																											
B		2Q		1Q			1Q	1Q				5Q	2Q									1CPC 3Q	1S 2Q	1Q		20	
C		2Q	1Q	1Q				2Q	1Q			1S 1Q	3Q				8Q					3CPC 4S 7Q	1PR 1CPC 2Q			38	87
Column Totals		136	155	63	17		58	87	40	21		308	231	63	15		145	102	30	3	1	544	200	27	6		2252

Total Primary	Total Secondary	Total Internal	Total Chunks	Total Thinning
371	206	617	280	778

RAW MATERIAL

Quartz = Q

Coastal Plain Chert = CPC

Silicate = S

Porphoritic Ryolite = PR

Flow Banded Ryolite = FR

Orthograde Quartzite = ORV

Translucent Ridge & Valley Chert = TRV

APPENDIX I(B)

DEBITAGE

Grid Subsurface Sample Units

Provenience	Primary Decortication Flakes — Flake Area 1	2	3	4	5	Secondary Decortication Flakes — Flake Area 1	2	3	4	5	Internal Flakes — Flake Area 1	2	3	4	5	Chunks — Flake Area 1	2	3	4	5	Bifacial Thinning & Resharpening Flakes — Flake Area 1	2	3	4	5	Totals For Levels	Totals Per Units
(NO,WO) A		1Q											3Q	1Q	1Q		2Q	2Q				2CPC 2Q	1CPC			15	
B							1Q	10.Q					10.Q 3Q	1Q			1Q	1Q				3Q	1CPC			13	33
C			1Q									1Q					1Q					1CPC 1Q				5	
(N8,W8) A							1Q	1Q				1Q	2Q				1Q	1Q				1Q	1Q			9	
B			1Q					10.Q				1Q					2Q					1Q				6	15
(N8,W24) A													1Q						2Q				1Q			4	
B			1Q					1Q				1Q	3Q				1Q									7	
C			1Q									2Q	2Q				2Q	1Q				1Q	1CPC 2Q			12	82
D		1Q	2Q					1Q				1Q	10.RV 5Q	1Q			4Q	6Q	1Q			1S 1FR 3Q	1CPC 2Q	1Q		32	
E		1Q	2Q		1Q			2Q	1Q	1Q		2Q	3Q	2Q				3Q	3Q	3Q		1Q	1CPC 1Q			27	
(N24,W40) A		1Q	6Q	1Q			2Q	6Q				5Q	4Q				10Q	2Q		1Q		1S 2CPC 5Q	1CPC 1Q			48	
B		5Q	3Q				3Q	2Q	1Q			4Q	4Q	1Q			6Q	2Q	1Q			2CPC 7Q	3Q			44	
C			2Q				1Q	1Q					3Q	3Q			1Q	3Q				10.Q 4Q	1Q			20	115
D			1Q														2Q									3	
(N40,W48) A		1Q	2Q				3Q	2Q	1Q			8Q	2Q				10Q	5Q				5Q				39	
B		2Q	3Q						1Q			3Q	2Q	1Q			7Q	4Q	1Q			5Q	1Q			30	
C												1Q		1Q								1Q				3	75
D												1Q												1Q		2	
E																								1Q		1	
(N48,W56) A		4Q	9Q	3Q			2Q	3Q	3Q	1Q		8Q	3Q				4Q	1Q				1S 1CPC 8Q	2Q	2Q		55	

APPENDIX I(B)cont.

Provenience	Primary Decortication Flakes Flake Area 1	2	3	4	5	Secondary Decortication Flakes Flake Area 1	2	3	4	5	Internal Flakes Flake Area 1	2	3	4	5	Chunks Flake Area 1	2	3	4	5	Bifacial Thinning & Resharpening Flakes Flake Area 1	2	3	4	5	Totals For Levels	Totals Per Units
(N48,W56) (con't.) B			1Q					1Q	1Q			7Q	3Q	1Q			4Q	2Q	1Q			1CPC 1S 10.Q 3Q	1CPC 3Q			31	
C		2Q	7Q		1Q		2Q	7Q				5Q	4Q	1Q	1Q		6Q	5Q	1Q			2CPC 16Q	1CPC 4Q	2Q		67	
D		2Q	1Q				1Q	1Q	1Q			3Q	2Q	1Q	1Q		1Q	3Q				9Q	1S 2Q	1Q		30	
E		2Q	2Q									2Q	2Q				1Q	1Q				4Q	2Q	1Q		17	217
F		2Q					2Q	1Q	1Q			1Q	1CPC 1Q	1PR									1Q			11	
G													1PR 1Q									1CPC 2Q	1Q			6	
(N32,W24) A		2Q												1Q				1Q	1Q			1S 1Q	1Q			8	
B												4Q	1S 1Q	1S 1Q	1Q		1Q					1S 2Q				13	21
(N24,W0) A							1Q					1Q	3Q				1Q	2Q				5Q	1CPC	1Q		15	
B		1Q							1Q	1Q		1Q	1Q	1Q			1Q			1Q		1S 6Q	1Q			16	
C																	1Q	1Q				1CPC 1Q	1Q			5	36
Column Totals		27	45	4	2		19	31	11	3		63	61	20	5		70	46	11	5		118	42	11			594

Total Primary	Total Secondary	Total Internal	Total Chunks	Total Thinning
78	64	149	132	171

RAW MATERIAL

Quartz = Q

Coastal Plain Chert = CPC

Silicate = S

Porphoritic Ryolite = PR

Flow Banded Ryolite = FR

Orthograde Quartzite = ORV

Translucent Ridge & Valley Chert = TRV

APPENDIX I(C)

UTILIZED AND MODIFIED FLAKE TOOLS

Block Excavation Units

Provenience	Utilized (Nibbling)	Modified (Retouched)	Flake Type	Flake Area	Raw Materials	# of Use Edges	Use Edge Length	Use Edge Morphology	Depth of Nibbling/Retouch	Surface Location of Nibbling/Retouch	Use Edge Angle
(N16,W25) D	Yes	No	Internal	3	C.P.C. (Purple-Heated?)	2	12mm 15mm	Convex Straight-Concave	1mm 1mm	Dorsal Dorsal	70° 30°
(N16,W32) A	Yes	No	Thinning	3	C.P.C. (Red-Heated?)	1	8mm	Convex	1mm	Dorsal	20°
(N23,W32) B	Yes	No	Thinning	3	Silicate (Dark Gray)	1	19mm	Straight	1mm	Dorsal & Ventral	12°
(N21,W25) C	Yes	No	Internal	3	C.P.C. (Mottled Brown)	1	23mm	Convex	1mm	Dorsal	35°
(N19,W25) A	Yes	No	Thinning	4	C.P.C. (Brown)	1	13mm	Concave	1mm	Ventral	50°
(N16,W26) B	Yes	No	Thinning	3	Silicate (Dark Gray- Heavily Patinated)	1	9mm	Straight	1mm	Dorsal	35°
	Yes	No	Internal	3	Quartz (White)	1	10mm	Concave	1mm	Dorsal	60°
C	Yes	Yes (End Scraper)	Internal	4	Quartz (White)	1	20mm	Convex	1.5mm-Nibbling 3-6mm-Retouch	Dorsal	90°
(N16,W29) B	Yes	Yes (Denticulate/ Spoke-Shave)	Internal	3	Quartz (White)	2	9mm 10mm	Concave Concave	1mm-Nibbling 3mm-Retouch 1mm-Nibbling 3.5mm-Retouch	Dorsal Dorsal	90° 65°
C	Yes	Yes	Internal	2	Quartz (White)	1	12mm	Straight	1mm-Nibbling 2mm-Retouch	Dorsal	50°
D	Yes	No	Thinning	4	Flow Banded Ryolite (Dark Gray- Heavily Patinated)	2	18mm 29mm	Convex Convex	1.5mm 1.5mm	Dorsal & Ventral Dorsal & Ventral	55° 25°
(N18,W29) A	Yes	Yes	Thinning	3	Opaque Ridge & Valley Chert (Dark Gray)	1	14mm	Concave	.5mm-Nibbling 2.0mm-Retouch	Dorsal	45°
B	Yes	Yes	Internal	4	Quartz (White)	1	20mm	Concave	1mm-Nibbling 4mm-Retouch	Dorsal	45°
C	Yes	No	Internal	5	Flow Banded Ryolite (Dark Gray- Heavily Patinated)	2	12mm 18mm	Straight Straight	2mm 2mm	Dorsal & Ventral Dorsal & Ventral	65° 45°
(N21,W32) B	Yes	No	Thinning	3	Silicate (Dark Gray)	1	10mm	Convex	1.5mm	Dorsal	65°
TOTALS	15	5									

Grid Subsurface Sample Units

Provenience	Utilized (Nibbling)	Modified (Retouched)	Flake Type	Flake Area	Raw Materials	# of Use Edges	Use Edge Length	Use Edge Morphology	Depth of Nibbling/Retouch	Surface Location of Nibbling/Retouch	Use Edge Angle
(N0,W0) A	Yes	No	Thinning	3	C.P.C. (Mottled Brown)	2	13mm 14mm	Concave Convex	1mm 1mm	Dorsal Dorsal	45° 30°

APPENDIX I(D)
BIFACES

Block Excavation Unit

Provenience	Biface Type	Biface Condition	Raw Material	Blade Length	Haft Element Length	Blade Base Width	Proximal Haft Element Width	Maximum Thickness	Edge Angle	Edge Damage	Comments
(N23,W25) B	Hafted Biface/ Morrow Mountain?	Stem Frag.	Quartz (White)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
(N16,W25) A	Hafted Biface/ Triangular Point	Basal Portion	Quartz (White)	N/A	N/A	17mm	N/A	5mm	55°	No	Similar to Caraway Points? (Coe 1964). Broken across blade.
D	Blank	Distal Frag.?	Quartz (White)	N/A	N/A	N/A	N/A	N/A	70°	No	Thick, asymetrical, unfinished Biface tool broken during manufacture.
D	Blank	Distal Portion	Silicate (Tan)	N/A	N/A	N/A	N/A	N/A	50°	No	Preform
D	Hafted Biface/ Triangular Point	Whole	Quartz (White)	17mm Total Length	N/A	15mm	N/A	4mm	35°	No	Similar to Caraway Points? (Coe 1964).
(N16,W32) B	Blank	Basal Frag.?	Quartz (White)	N/A	N/A	N/A	N/A	N/A	70°	No	Thick, asymetrical, unfinished Biface tool broken during manufacture.
C	Unidentifiable Hafted Biface?	Blade Edge Frag. & Portion of Basal Shoulder	Quartz (White-Iron Stained)	N/A	N/A	N/A	N/A	N/A	40°	No	Appears to have been stemmed Biface.
F	Hafted Biface/ Guilford	Whole	Quartz (White)	29mm	10mm	17.5mm	N/A	10mm	70°	No	Lateral margins of distal end have been resharpened.
(N23,W32) A	Unidentifiable Hafted Biface?	Tip/Distal Frag.	Quartz (White)	N/A	N/A	N/A	N/A	N/A	55°	No	N/A
B	Blank	Whole	Silicate (Dark Gray)	27mm Total Length	N/A	20mm	N/A	5mm	35°	No	Triangular point preform. Moderate Weathering/patination.
(N22,W25) A	Unidentifiable Hafted Biface?	Tip/Distal Frag.	Quartz (White)	N/A	N/A	N/A	N/A	N/A	65°	No	N/A
A	Other Biface	Blade Edge Frag.	Quartz (White)	N/A	N/A	N/A	N/A	N/A	50°	Yes	Small, unidentifiable Biface frag. exhibits wear in the form of smoothing/rounding & edge crushing.
(N20,W25) B	Hafted Biface/ Palmer	Whole	Quartz (White)	27mm	12mm	21mm	17mm(Distance between basal notches)	8mm	60°	No	Serrated. Asymetrical with one lateral edge slightly beveled; possibly resharpened. No apparent basal or lateral grinding. Basal width below notches = 19mm.
(N19,W25) B	Hafted Biface/ Probable Triangular Point	Distal Portion/ Tip	Silicate (Dark Gray)	N/A	N/A	N/A	N/A	N/A	45°	No	Thinness & narrowness suggests triangular point. Caraway (Coe 1964).
(N18,W25) A	Blank	Blade Edge Frag.	Quartz (White)	N/A	N/A	N/A	N/A	N/A	70°	No	Thick, asymetrical, unfinished Biface tool broken during manufacture.

Provenience	Biface Type	Biface Condition	Raw Material	Blade Length	Haft Element Length	Blade Base Width	Proximal Haft Element Width	Maximum Thickness	Edge Angle	Edge Damage	Comments
(N17,W25) A	Blank	Blade Edge Frag.	Quartz (White)	N/A	N/A	N/A	N/A	N/A	70°	No	"Possibly Heated."
A	Other Biface	Blade Edge Frag.	Orthograde Quartzite (Light Gray)	N/A	N/A	N/A	N/A	N/A	55°	Yes	Small, unidentifiable frag. of Biface tool. Wear in the form of edge smoothing/rounding.
B	Other Biface	Portion of Proximal End Missing	Quartz (White)	54mm Total Length	N/A	28mm	N/A	14mm	55°	Yes	Ovate-triangular Biface tool. Wear in the form of edge smoothing/rounding & crushing.
(N16,W26) B	Other Biface	Blade Edge Frag.	Quartz (White)	N/A	N/A	N/A	N/A	N/A	55°	Yes	Small, unidentifiable frag. of Biface tool. Wear in the form of edge smoothing & rounding.
B	Hafted Biface/ Triangular Point	Whole	Quartz (White)	20mm Total Length	N/A	15mm	N/A	5mm	55°	No	Similar to Caraway Triangular Points? (Coe 1964).
(N16,W27) D	Hafted Biface/ Triangular Point	Basal Portion	Orthograde Quartzite (Tan)	N/A	N/A	21mm	N/A	5mm	50°	No	Similar to Yadkin Triangular Points? (Coe 1964)
(N16,W28) A	Blank	Distal Portion	Quartz (White)	N/A	N/A	N/A	N/A	N/A	70°	No	Preform
(N16,W29) C	Hafted Biface/ Triangular Point	Basal Portion	Orthograde Quartzite (Tan)	N/A	N/A	17mm	N/A	5mm	50°	No	Most similar to Caraway Triangular Points (Coe 1964).
(N16,W29) (con't.) D	Blank	Blade Edge Frag.	Quartz (White)	N/A	N/A	N/A	N/A	N/A	60°	No	Thick, asymetrical, unfinished Biface tool broken during manufacture.
D	Other Biface	Blade Edge Frag.	Quartz (White)	N/A	N/A	N/A	N/A	N/A	55°	Yes	Small, unidentifiable frag. of Biface tool. Wear in the form of edge smoothing/rounding. Possibly heated.
(N16,W30) B	Hafted Biface/ Morrow Mountain?	Basal Portion	Quartz (White-Iron Stained)	N/A	18mm	28mm	21mm	10mm	65°	No	Relatively straight, but slightly tapering stem with rounded base.
B	Blank	Whole	Quartz (White)	48mm Total Length	N/A	32mm	N/A	17mm	75°	No	Thick, asymetrical, unfinished Biface tool. Roughly ovate-triangular in form.
E	Hafted Biface/ Dalton	Whole	Flow Banded Ryolite (Dark Gray)	31mm	12mm	26mm	30mm	6mm	55°	Yes	Heavily Patinated/weathered (yellow-tan). Wear consists of moderate edge smoothing/rounding. Alternate beveled. Lateral & basal grinding.
(N23,W26) A	Blank	Basal Portion	Quartz (White)	N/A	N/A	23mm	N/A	14mm	80°	No	Thick, asymetrical, unfinished Biface tool broken during manufacture.
(N19,W26) D	Hafted Biface/ Morrow Mountain	Basal Frag. (Stem & Portion of Shoulder)	Quartz (White)	N/A	12mm	N/A	13mm	N/A	N/A	N/A	Relatively straight, but slightly tapering stem with rounded base.

APPENDIX I(D) cont.

Provenience	Biface Type	Biface Condition	Raw Material	Blade Length	Haft Element Length	Blade Base Width	Proximal Haft Element Width	Maximum Thickness	Edge Angle	Edge Damage	Comments
(N17,W28) B	Hafted Biface/ Otarre	Whole	Silicate (Dark Gray)	34mm	12mm	30mm	16mm	10mm	65°	Yes?	Heavily patinated/weathered (a light, dull gray). Edge wear consists of light smoothing/ rounding.
B	Blank	Basal Portion	Quartz (White)	N/A	N/A	39mm	N/A	13mm	70°	No	Thick, asymetrical, unfinished Biface tool broken during manufacture.
D	Hafted Biface/ Triangular Point	Basal Portion	Quartz (White)	N/A	N/A	22mm	N/A	5mm	45°	No	Similar to Caraway Triangular Points (Coe 1964).
E	Other Biface	Blade Edge Frag.	Quartz (White with Reddened Surface)	N/A	N/A	N/A	N/A	N/A	70°	Yes?	Small, unidentifiable frag. of Biface tool. Wear consists of light smoothing/rounding of blade edge. Possibly heated.
(N18,W29) B	Blank	Basal Portion	Quartz (White with Reddened Surface)	N/A	N/A	28mm	N/A	10mm	70°	No	Thick, asymetrical, unfinished Biface tool broken during manufacture. Possibly heated.
C	Hafted Biface/ Swannanoa	Basal Portion	Quartz (White)	N/A	8mm	27mm	19mm	14mm	70°	Yes	Edge wear consists of heavy rounding/ smoothing.
(N20,W29) A	Hafted Biface/ Triangular Point	Basal Portion	Coastal Plain Chert (Mottled Brown)	N/A	N/A	23mm	N/A	6mm	45°	No	Similar to Yadkin Triangular Points (Coe 1964). Incurvate edges suggest possible resharpening/retipping.
B	Hafted Biface/ Triangular Point	Basal Portion	Quartz (White)	N/A	N/A	15mm	N/A	4mm	60°	No	Similar to Caraway Triangular Points (Coe 1964).
(N20,W29) (con't) D	Hafted Biface/ Savannah River	Basal Portion	Quartz (White with Pink Surface	N/A	17mm	35mm	23mm	12mm	65°	Yes?	Possibly heated. Edge wear consists of light smoothing/rounding.
(N22,W30) A	Hafted Biface/ Triangular Point	Basal Frag. (corner/ shoulder)	Quartz (White)	N/A	N/A	N/A	N/A	N/A	35°	No	Similar to Caraway Triangular Point (Coe 1964).
A	Unidentifiable Hafted Biface?	Tip/Distal Frag.	Quartz (White)	N/A	N/A	N/A	N/A	N/A	60°	No	N/A
B	Hafted Biface/ Guilford	Basal Portion	Quartz (White)	N/A	17mm	20mm	N/A	10mm	65°	No	N/A
(N21,W32) B	Hafted Biface/ Triangular Point	Whole	Coastal Plain Chert (Mottled Brown)	18mm (Total Length)	N/A	16mm	N/A	4mm	65°	Yes?	Similar to Caraway Triangular Points (Coe 1964). Edge wear consists of light smoothing/rounding.
C	Hafted Biface/ Triangular Point	Basal Portion	Silicate (Dark Gray)	N/A	N/A	30mm	N/A	6mm	60°	No	Similar to Yadkin Triangular Points (Coe 1964). Incurvate edges suggest possible resharpening/retipping.
(N19,W31) B	Unidentifiable Hafted Biface?	Tip/Distal Portion	Quartz (White)	N/A	N/A	N/A	N/A	N/A	65°	No	N/A
C	Hafted Biface/ Triangular Point	Basal Portion	Silicate (Dark Gray)	N/A	N/A	20mm	N/A	4mm	35°	No	Similar to Caraway Triangular Points (Coe 1964). One edge resharpened/retipped.
(N22,W28) C	Hafted Biface/ Bradley Spike	Basal Portion	Silicate (Dark Gray)	N/A	11mm	17mm	14mm	8mm	70°	Yes	Edge wear consists of heavy rounding/smoothing. Heavily patinated/weathered (a light, dull tan-gray).

APPENDIX I(D)

BIFACES

Grid Subsurface Sample Units

Provenience	Biface Type	Biface Condition	Raw Material	Blade Length	Haft Element Length	Blade Base Width	Proximal Haft Element Width	Maximum Thickness	Edge Angle	Edge Damage	Comments
(N8,W24) C	Hafted Biface/ Triangular Point	Whole	Quartz (White)	21mm Total Length	N/A	21mm	N/A	4mm	55°	No	Similar to Caraway Triangular Points (Coe 1964).
(N24,W40) A	Blank	Whole	Quartz (White)	65mm Total Length	N/A	45mm	N/A	20mm	70°	No	Thick, asymetrical, unfinished Biface tool. Roughly Ovate-Triangular in form. Possibly heated.
C	Hafted Biface/ Palmer	Whole	Silicate (A dull, light gray)	28mm	10mm	22mm	16mm (Distance between basal notches)	6mm	60°	No	Serrated. Heavily patinated/weathered. No apparent basal or lateral grindings. Not beveled. Basal width below notches = 20mm.
(N40,W48) A	Hafted Biface/ Palmer	Basal Portion	Quartz (White)	N/A	11mm	18mm	15mm (Distance between basal notches)	8mm	65°	Yes?	Edge wear consists of light smoothing/ rounding. Serrated. Not beveled. No apparent basal or lateral grinding. Basal width below notches = 17mm.
A	Hafted Biface/ Savannah River	Basal Portion	Quartz (White-Iron Stained)	N/A	17mm	48mm	25mm	N/A	60°	N/A	Utilized along distal broken edge. Nibbling scars less than 2mm deep on dorsal surface of edge. Convex use-edge, use-edge is 34mm long with an angle of 70°
A	Hafted Biface/ Triangular Point?	Tip/Distal Portion	Quartz (White)	N/A	N/A	N/A	N/A	4mm?	55°	No	Thinness & narrowness suggest probable Caraway Triangular Point (Coe 1964).
(N48,W56) A	Unidentifiable Hafted Biface?	Tip/Distal Portion	Coastal Plain Chert (Mottled Yellow-tan)	N/A	N/A	N/A	N/A	N/A	50°	No	Light patination/weathering
B	Hafted Biface/ Savannah River	Basal Frag. (Stem)	Quartz (White)	N/A	N/A	N/A	20mm	N/A	N/A	N/A	N/A
B	Hafted Biface/ Triangular Point	Midsection with portion of base	Coastal Plain Chert (Mottled Gray-tan)	N/A	N/A	N/A	N/A	4mm	50°	No	Probable Yadkin (Coe 1964).
B	Hafted Biface/ Triangular Point	Whole	Coastal Plain Chert (yellow)	28mm Total Length	N/A	26mm	N/A	6mm	60°	No	Most similar to Yadkin Triangular Points (Coe 1964). May be a reworked Early Archaic Point as indicated by a hexagonal cross-section and remnant basal ears.
C	Other Biface	Blade Edge Frag.	Quartz (White-Iron Stained)	N/A	N/A	N/A	N/A	N/A	65°	Yes	Small, unidentifiable fragment of Biface tool. Edge wear consists of light smoothing/rounding & edge crushing.
C	Hafted Biface/ Triangular Point	Basal Portion	Quartz (White)	N/A	N/A	16mm	N/A	5mm	45°	No	Similar to Caraway Triangular Point (Coe 1964).
D	Hafted Biface/ Otarre	Whole	Felsic Tuff(Dark gray with white phenocrysts)	37mm	10mm	28mm	16mm	8mm	65°	No	Heavily patinated/weathered. Surface is a dull, medium gray with white phenocrysts.
(N32,W24) A	Hafted Biface/ Unknown Type	Basal Portion	Coastal Plain Chert (Mottled tan-brown)	N/A	4mm	24mm	12mm	6mm	40°	No	Corner-notched Point. Probably Woodland.
(N24,W0) B	Hafted Biface/ Triangular Point	Basal Frag. (only a portion of base	Coastal Plain Chert (mottled tan-brown)	N/A	N/A	N/A	N/A	N/A	50°	No	Similar to Yadkin Triangular Points (Coe 1964).

APPENDIX I(E)

QUARTZ COBBLES AND COBBLE FRAGMENTS WITH CORTEX AND ANGULAR QUARTZ FRAGMENTS WITHOUT CORTEX

Block Excavation Units

	With Cortex		Without Cortex	
Provenience	No.	Wt. (Grams)	No.	Wt. (Grams)
(N23,W25)				
A	32	324	4	23
B	18	212	6	39
C	26	258	7	19
(N16,W25)				
A	46	727	19	47
B	24	126	9	12
C	24	267	3	14
D	22	277	17	63
(N16,W32)				
A	35	478	18	94
B	27	408	16	77
C	40	395	28	91
D	13	279	2	24
E	9	152	3	29
F	24	854	9	101
(N23,W32)				
A	31	446	17	57
B	44	411	24	61
C	28	310	17	68
D	4	49	1	4
(N22,W25)				
A	29	298	18	86
B	27	317	23	54
C	35	868	13	38

APPENDIX I(E) cont.

Provenience	With Cortex No.	With Cortex Wt.(Grams)	Without Cortex No.	Without Cortex Wt.(Grams)
(N21,W25)				
A	31	302	29	84
B	28	395	27	111
C	34	444	20	51
(N20,W25)				
A	58	484	36	85
B	39	420	26	59
C	17	193	7	21
(N19,W25)				
A	34	359	19	45
B	27	248	10	60
C	34	559	8	24
D	10	165	2	5
(N18,W25)				
A	28	353	20	173
B	31	545	7	16
C	20	397	13	23
D	7	199	7	19
(N17,W25)				
A	36	320	28	166
B	40	300	17	130
C	10	123	9	45
D	38	1289	9	61
(N16,W26)				
A	63	713	20	96
B	24	260	18	33
C	24	325	14	69
D	15	281	7	28
E	12	298	5	17

APPENDIX I(E) cont.

Provenience	With Cortex No.	With Cortex Wt.(Grams)	Without Cortex No.	Without Cortex Wt.(Grams)
(N16,W27) A	44	562	16	105
B	26	229	7	16
C	26	388	16	65
D	25	435	20	97
(N16,W28) A	28	246	12	40
B	24	457	26	90
C	36	445	18	102
D	24	203	9	20
E	15	163	7	22
(N16,W29) A	35	602	9	45
B	26	347	14	64
C	68	877	19	121
D	48	785	20	117
E	22	426	9	29
(N16,W30) A	35	419	25	36
B	38	334	17	71
C	35	369	17	88
D	30	535	19	63
E	21	286	9	39
(N16,W31) A	57	843	15	48
B	28	285	18	54
C	40	886	12	23
D	20	283	10	28
E	26	406	9	35

APPENDIX I(E) cont.

Provenience	With Cortex No.	With Cortex Wt.(Grams)	Without Cortex No.	Without Cortex Wt.(Grams)
(N23,W26)				
A	26	326	19	56
B	23	100	9	20
C	8	126	6	29
(N19,W26)				
A	49	355	24	49
B	57	344	23	62
C	36	341	14	22
D	11	67	5	17
(N17,W28)				
A	45	780	14	96
B	54	522	11	59
C	45	681	26	110
D	85	2347	34	154
E	20	226	8	30
(N18,W29)				
A	27	407	35	66
B	22	1153	38	111
C	35	414	25	97
D	8	46	6	20
(N20,W29)				
A	63	733	94	207
B	44	560	58	110
C	21	334	31	49
D	16	74	13	35
(N22,W30)				
A	44	847	61	119
B	35	382	28	64
C	14	233	13	45

APPENDIX I(E) cont.

Provenience	With Cortex No.	With Cortex Wt.(Grams)	Without Cortex No.	Without Cortex Wt.(Grams)
(N21,W32) A	17	142	28	57
B	41	773	25	86
C	32	433	22	70
(N19,W31) A	45	771	27	120
B	33	385	68	138
C	25	328	20	67
(N22,W28) A	31	435	49	79
B	25	118	59	95
C	43	352	42	88
TOTALS	3055	42374	1900	6297

APPENDIX I(E) cont.

QUARTZ COBBLES AND COBBLE FRAGMENTS WITH CORTEX
ANGULAR QUARTZ FRAGMENTS WITHOUT CORTEX

Grid Subsurface Sample Units

	With Cortex		Without Cortex	
Provenience	No.	Wt.(Grams)	No.	Wt.(Grams)
(N0,W0)				
A	22	153	19	40
B	12	189	21	39
C	1	6	11	30
(N8,W8)				
A	11	107	8	40
B	7	67	7	15
C	1	2		
(N8,W24)				
A	13	153	8	31
B	15	267	13	46
C	15	220	18	42
D	65	808	30	69
E	39	1426	10	137
(N24,W40)				
A	63	684	52	162
B	55	373	22	77
C	19	237	12	44
D	1	2	1	5
(N40,W48)				
A	53	594	25	143
B	40	575	26	137
C	5	8	5	7
D	2	8	8	11
E	--	---	--	--

APPENDIX I(E) cont.

Provenience	With Cortex No.	With Cortex Wt.(Grams)	Without Cortex No.	Without Cortex Wt.(Grams)
(N48,W56)				
A	75	1005	53	181
B	37	847	34	77
C	64	1120	24	92
D	32	1005	21	57
E	39	1015	17	38
F	14	156	11	35
G	4	15	2	5
(N32,W24)				
A	35	441	14	51
B	18	103	24	38
(N24,W0)				
A	10	50	7	11
B	20	161	8	8
C	8	162	1	6
TOTALS	795	11959	512	1674

APPENDIX I(F)

OTHER LITHIC ARTIFACTS

Block Excavation Units

Provenience	Artifacts
(N16,W25) Level D	1 - Steatite Sherd
(N16,W31) Level D	1 - Steatite Sherd
(N17,W28) Level D	1 - Light green, fine grained, metamorphosed rock. Polished, possible pipe or bead fragment.
(N18,W29) Level B	1 - Light gray-green igneous/metamorphic rock. Handstone with wear on opposing flat grinding faces. Some battering on edges.

OTHER

Grid Subsurface Sample Units

Provenience	Artifacts
(N8,W24) Level D	1 - Steatite Sherd
	1 - Micaceous schist rim sherd with rounded lip.
(N24,W40) Level A	1 - Steatite Sherd

APPENDIX I(G)
CERAMICS

Block Excavation Units

Provenience	Plain, Sand Tempered	Check Stamped, Sand Tempered	Simple Stamped Sand Tempered	Fine Cord Marked, Sand Tempered	Fine Fabric Impressed, Sand Tempered	Rectilinear Complicated Stamped (?), Sand Tempered	Incised, Sand Tempered	Unidentifiable Decorated, Sand Tempered	Level Total	Unit Total
(N23,W25)										
A	1	1	-	-	-	-	-	-	2	
B	-	-	-	1	-	-	-	-	1	6
C	3	-	-	-	-	-	-	-	3	
(N16,W25)										
A	4	-	1	-	-	-	-	-	5	
B	1	-	-	-	-	-	-	-	1	
C	-	-	-	-	-	-	-	-	-	10
D	3	1	-	-	-	-	-	-	4	
(N16,W32)										
A	3	-	-	-	-	-	-	-	3	
B	1	-	-	-	-	-	-	-	1	
C	-	-	-	-	-	-	-	-	-	9
D	1	-	-	-	-	-	-	-	1	
E	-	-	-	-	-	-	-	-	-	
F	1	2	-	-	1	-	-	-	4	
(N23,W32)										
A	5	-	-	-	-	-	-	1	6	
B	1	-	-	-	-	-	-	-	1	
C	6	3	-	-	-	-	-	-	9	17
D	1	-	-	-	-	-	-	-	1	
(N22,W25)										
A	3	-	-	-	-	-	-	-	3	
B	5	2	-	-	-	-	1	-	8	16
C	4	1	-	-	-	-	-	-	5	

APPENDIX I(G) cont.

Provenience	Plain, Sand Tempered	Check Stamped, Sand Tempered	Simple Stamped Sand Tempered	Fine Cord Marked, Sand Tempered	Fine Fabric Impressed, Sand Tempered	Rectilinear Complicated Stamped (?), Sand Tempered	Incised, Sand Tempered	Unidentifiable Decorated, Sand Tempered	Level Total	Unit Total
(N21,W25)										
A	3	2	-	-	-	-	-	-	5	
B	8	-	1	-	-	-	-	-	9	22
C	2	4	-	-	-	-	1	1	8	
(N20,W25)										
A	2	-	1	-	-	-	-	1	4	
B	7	2	-	-	-	-	-	-	9	18
C	3	2	-	-	-	-	-	-	5	
(N19,W25)										
A	4	1	-	-	-	-	-	-	5	
B	5	1	-	-	-	-	-	-	6	16
C	3	-	-	-	-	-	1	-	4	
D	-	-	-	-	-	-	1	-	1	
(N18,W25)										
A	7	1	-	-	-	-	-	-	8	
B	5	2	-	-	-	-	1	-	8	23
C	1	3	-	-	-	-	-	-	4	
D	2	1	-	-	-	-	-	-	3	
(N17,W25)										
A	4	2	-	-	-	-	1	-	7	
B	7	1	-	-	-	-	-	-	8	
C	2	1	-	-	-	-	-	-	3	23
D	4	1	-	-	-	-	-	-	5	
(N16,W26)										
A	5	1	-	-	-	-	-	-	6	
B	3	2	-	-	-	-	-	-	5	

APPENDIX I(G) cont.

Provenience	Plain, Sand Tempered	Check Stamped, Sand Tempered	Simple Stamped Sand Tempered	Fine Cord Marked, Sand Tempered	Fine Fabric Impressed, Sand Tempered	Rectilinear Complicated Stamped (?) Sand Tempered	Incised, Sand Tempered	Unidentifiable Decorated, Sand Tempered	Level Total	Unit Total
(N22,W25) (con't.)										
C	1	-	-	-	-	-	-	-	1	
D	1	-	-	-	-	-	1	-	2	17
E	2	1	-	-	-	-	-	-	3	
(N16,W27)										
A	14	1	-	-	-	-	-	-	15	
B	2	-	-	-	-	-	-	-	2	
C	5	-	-	-	-	-	1	-	6	25
D	1	-	-	-	-	-	-	1	2	
(N16,W28)										
A	7	-	-	-	-	-	1	-	8	
B	1	-	-	-	-	-	-	-	1	
C	2	2	-	-	-	-	1	-	5	20
D	-	2	-	-	-	-	-	-	2	
E	3	1	-	-	-	-	-	-	4	
(N16,W29)										
A	6	-	-	-	-	-	-	-	6	
B	1	-	-	-	-	-	1	-	2	
C	4	1	-	-	-	-	1	-	6	21
D	1	2	-	-	-	-	-	-	3	
E	1	2	-	-	1	-	-	-	4	
(N16,W30)										
A	4	-	-	-	-	-	-	-	4	
B	1	-	-	-	-	-	-	-	1	
C	2	2	-	-	-	-	-	-	4	

APPENDIX I(G) cont.

Provenience	Plain, Sand Tempered	Check Stamped, Sand Tempered	Simple Stamped Sand Tempered	Fine Cord Marked, Sand Tempered	Fine Fabric Impressed, Sand Tempered	Rectilinear Complicated Stamped (?), Sand Tempered	Incised, Sand Tempered	Unidentifiable Decorated, Sand Tempered	Level Total	Unit Total
(N16,W30) (con't.)										
D	-	1	-	-	-	-	-	-	1	14
E	1	3	-	-	-	-	-	-	4	
(N16,W31)										
A	6	1	-	-	-	-	-	-	7	
B	1	1	-	-	-	-	-	-	2	
C	1	1	-	-	-	-	-	-	2	15
D	-	1	-	-	-	-	-	-	1	
E	1	2	-	-	-	-	-	-	3	
(N23,W26)										
A	7	-	-	-	-	-	-	-	7	
B	3	-	-	-	-	-	-	-	3	11
C	1	-	-	-	-	-	-	-	1	
(N19,W26)										
A	6	1	-	-	-	-	1	-	8	
B	11	2	-	-	-	-	-	-	13	
C	7	2	-	-	-	-	-	-	9	34
D	4	-	-	-	-	-	-	-	4	
(N17,W28)										
A	4	2	-	-	-	-	-	-	6	
B	5	1	-	-	-	-	-	-	6	
C	4	-	-	-	-	-	1	-	5	27
D	5	3	-	-	-	-	-	-	8	
E	2	-	-	-	-	-	-	-	2	

APPENDIX I(G) cont.

Provenience	Plain, Sand Tempered	Check Stamped, Sand Tempered	Simple Stamped Sand Tempered	Fine Cord Marked, Sand Tempered	Fine Fabric Impressed, Sand Tempered	Rectilinear Complicated Stamped (?), Sand Tempered	Incised, Sand Tempered	Unidentifiable Decorated, Sand Tempered	Level Total	Unit Total
(N18,W29)										
A	4	-	1	-	-	-	-	-	5	
B	2	1	-	-	-	-	-	-	3	
C	5	-	-	-	-	-	-	-	5	17
D	3	-	-	-	-	1	-	-	4	
(N20,W29)										
A	10	-	-	-	-	-	-	-	10	
B	5	2	1	-	-	-	1	-	9	
C	2	2	-	-	-	-	2	-	6	29
D	4	-	-	-	-	-	-	-	4	
(N22,W30)										
A	9	2	1	-	-	-	-	-	12	
B	6	2	-	-	-	-	-	-	8	23
C	3	-	-	-	-	-	-	-	3	
(N21,W32)										
A	4	-	-	-	-	-	-	-	4	
B	10	2	-	1	-	-	1	-	14	27
C	6	2	-	-	-	-	1	-	9	
(N19,W31)										
A	5	4	-	-	-	-	-	-	9	
B	5	-	-	-	-	-	-	-	5	22
C	5	3	-	-	-	-	-	-	8	
(N22,W28)										
A	4	2	-	-	-	-	1	-	7	
B	3	5	-	-	-	-	2	-	10	24
C	6	-	-	-	-	-	1	-	7	
TOTALS	349	99	6	2	2	1	23	4		486

APPENDIX I(G)
CERAMICS

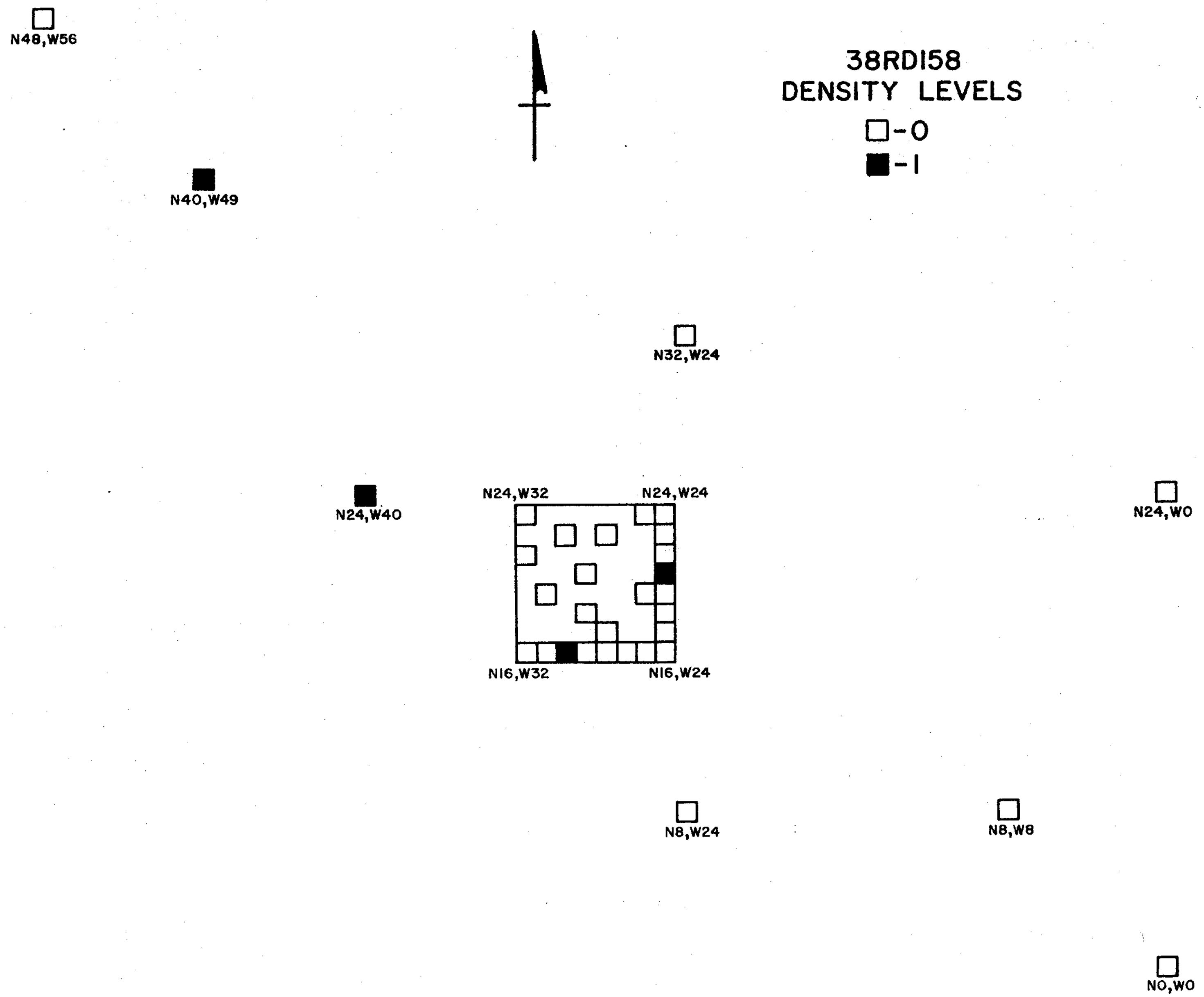
Grid Subsurface Sample Units

Provenience	Plain, Sand Tempered	Check Stamped, Sand Tempered	Simple Stamped Sand Tempered	Fine Cord Marked, Sand Tempered	Fine Fabric Impressed, Sand Tempered	Rectilinear Complicated Stamped (?), Sand Tempered	Incised, Sand Tempered	Unidentifiable Decorated, Sand Tempered	Level Total	Unit Total
(N0,W0)										
A	2	-	-	-	-	-	-	-	2	
B	1	-	-	-	-	-	1	-	2	4
C	-	-	-	-	-	-	-	-	-	
(N8,W8)										
A	-	-	-	-	-	-	-	-	-	
B	-	1	-	-	-	-	-	-	1	1
C	-	-	-	-	-	-	-	-	-	
(N8,W24)										
A	3	1	-	-	-	-	-	-	4	
B	5	-	-	-	-	-	-	-	5	
C	1	1	-	-	-	-	-	-	2	20
D	3	2	1	-	-	-	-	-	6	
E	1	2	-	-	-	-	-	-	3	
(N24,W40)										
A	5	3	-	-	-	-	-	-	8	
B	6	4	-	-	-	-	-	-	10	
C	2	-	-	-	-	-	1	-	3	21
D	-	-	-	-	-	-	-	-	-	
(N40,W48)										
A	6	-	-	-	-	-	-	1	7	
B	-	1	1	-	-	-	-	-	2	
C	1	-	-	-	-	-	-	-	1	

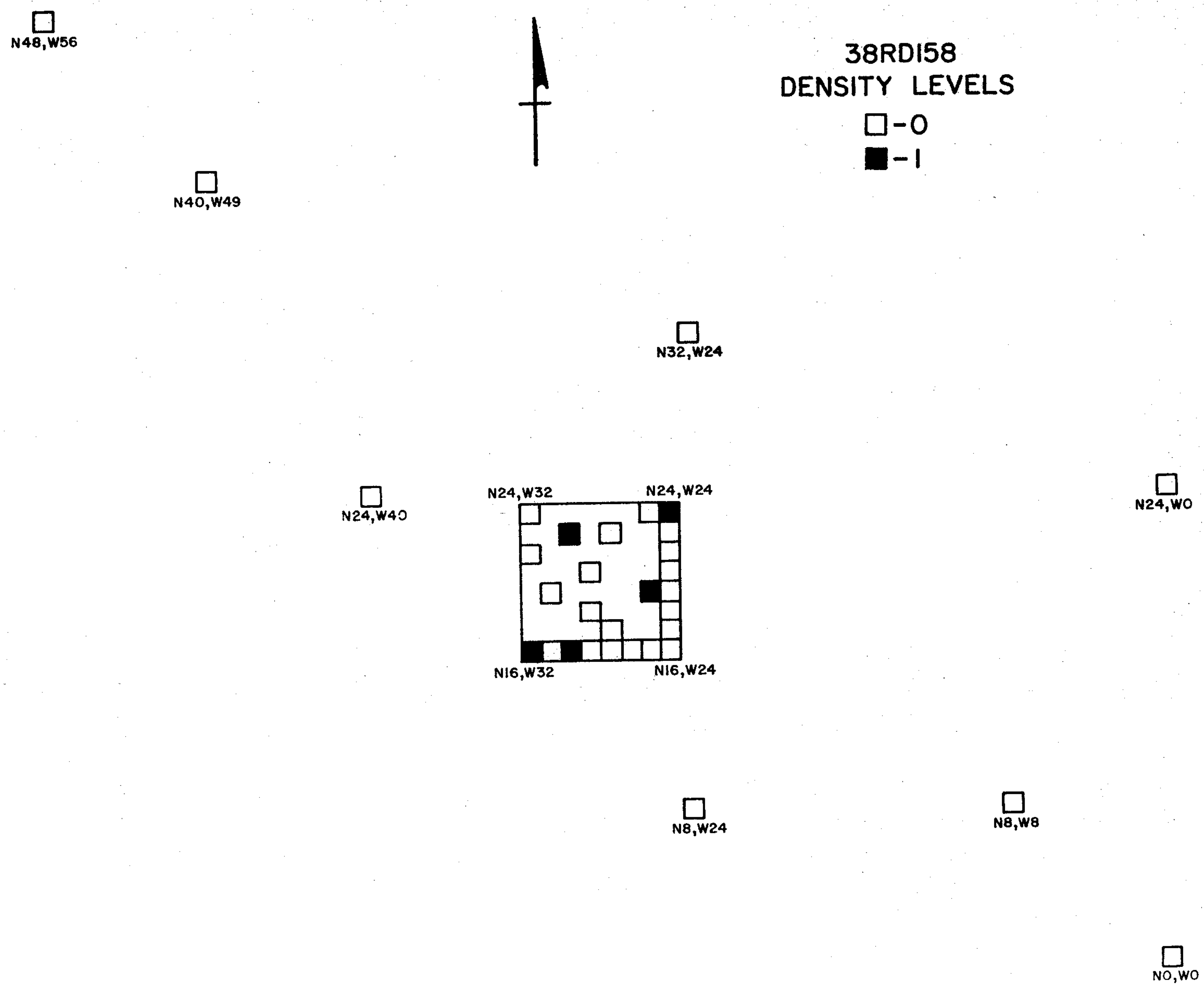
APPENDIX I(G) cont.

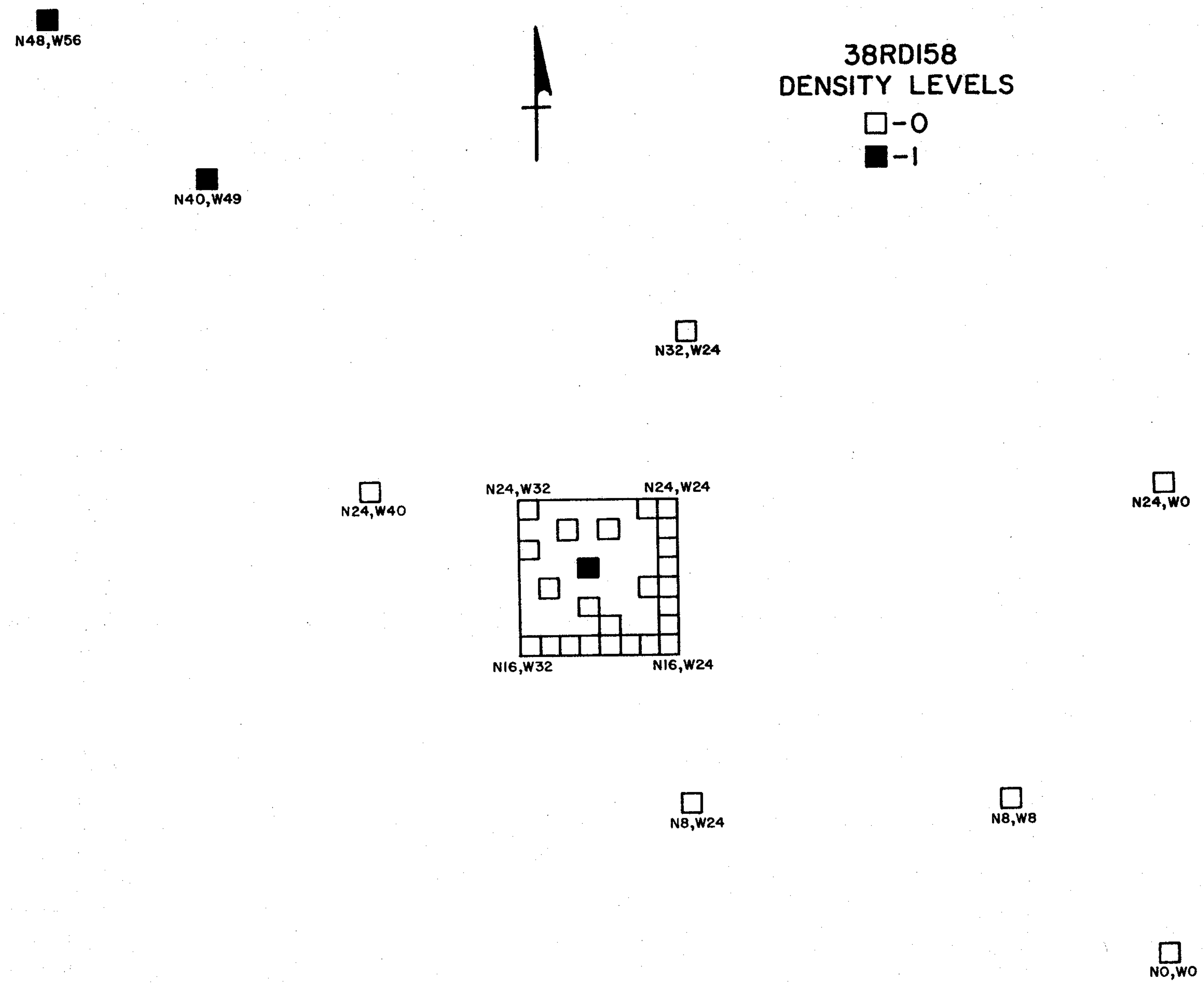
Provenience	Plain, Sand Tempered	Check Stamped, Sand Tempered	Simple Stamped Sand Tempered	Fine Cord Marked, Sand Tempered	Fine Fabric Impressed, Sand Tempered	Rectilinear Complicated Stamped (?), Sand Tempered	Incised, Sand Tempered	Unidentifiable Decorated, Sand Tempered	Level Total	Unit Total
(N48,W56)										
A	5	1	-	-	-	-	-	-	6	
B	1	1	-	-	-	-	-	-	2	
C	8	1	-	-	-	-	-	-	9	
D	3	-	1	-	-	-	2	-	6	61
E	11	-	-	-	-	-	6	-	17	
F	11	-	1	-	-	-	8	-	20	
G	-	-	-	1	-	-	-	-	1	
(N32,W24)										
A	2	-	-	-	-	-	-	-	2	
B	3	1	-	-	-	-	-	-	4	6
(N24,W0)										
A	5	1	-	-	-	-	-	-	6	
B	3	2	-	-	-	-	-	-	5	11
C	-	-	-	-	-	-	-	-	-	
TOTALS	88	22	4	1	0	0	18	1		134

APPENDIX II(a)

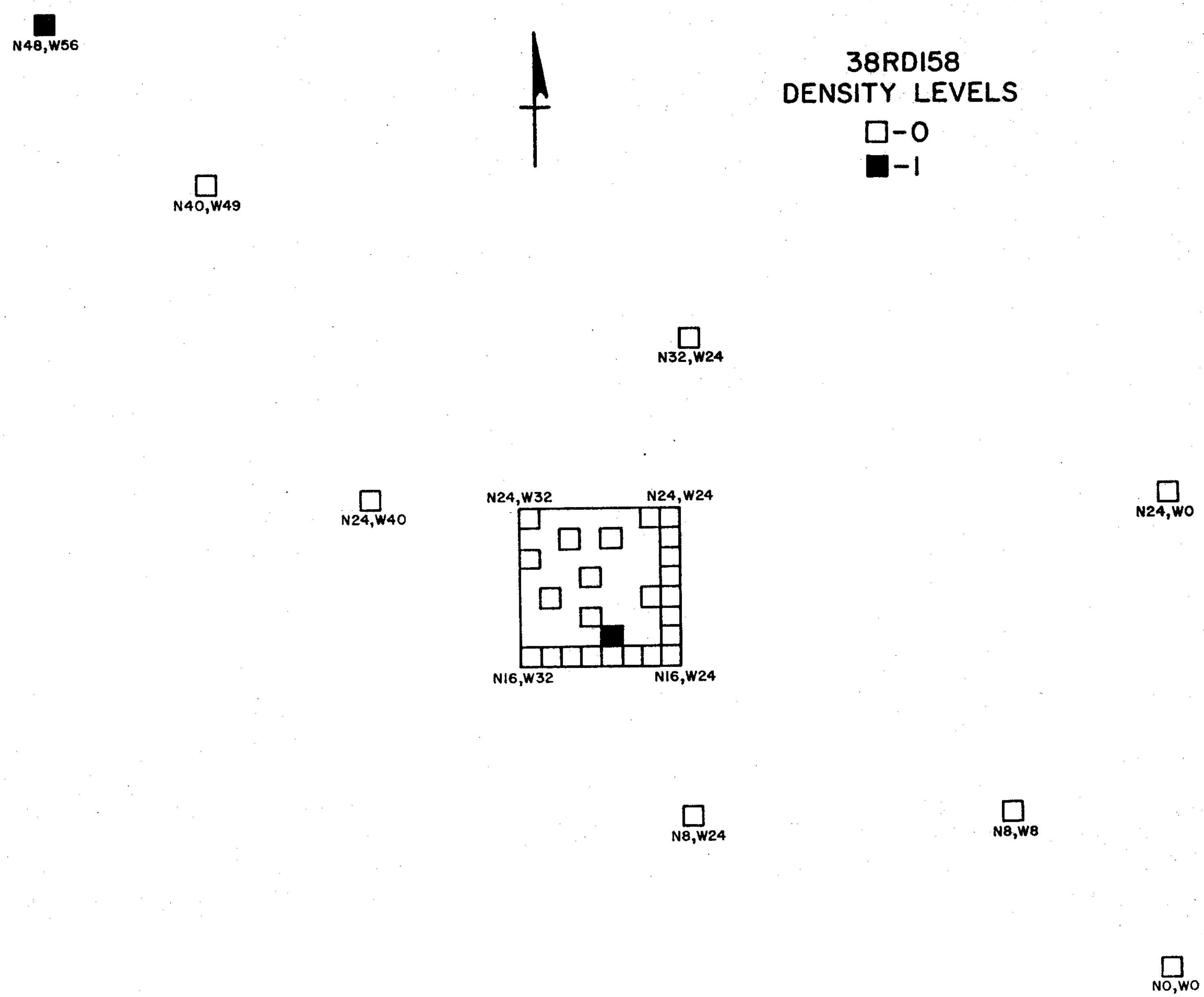


APPENDIX II(b)

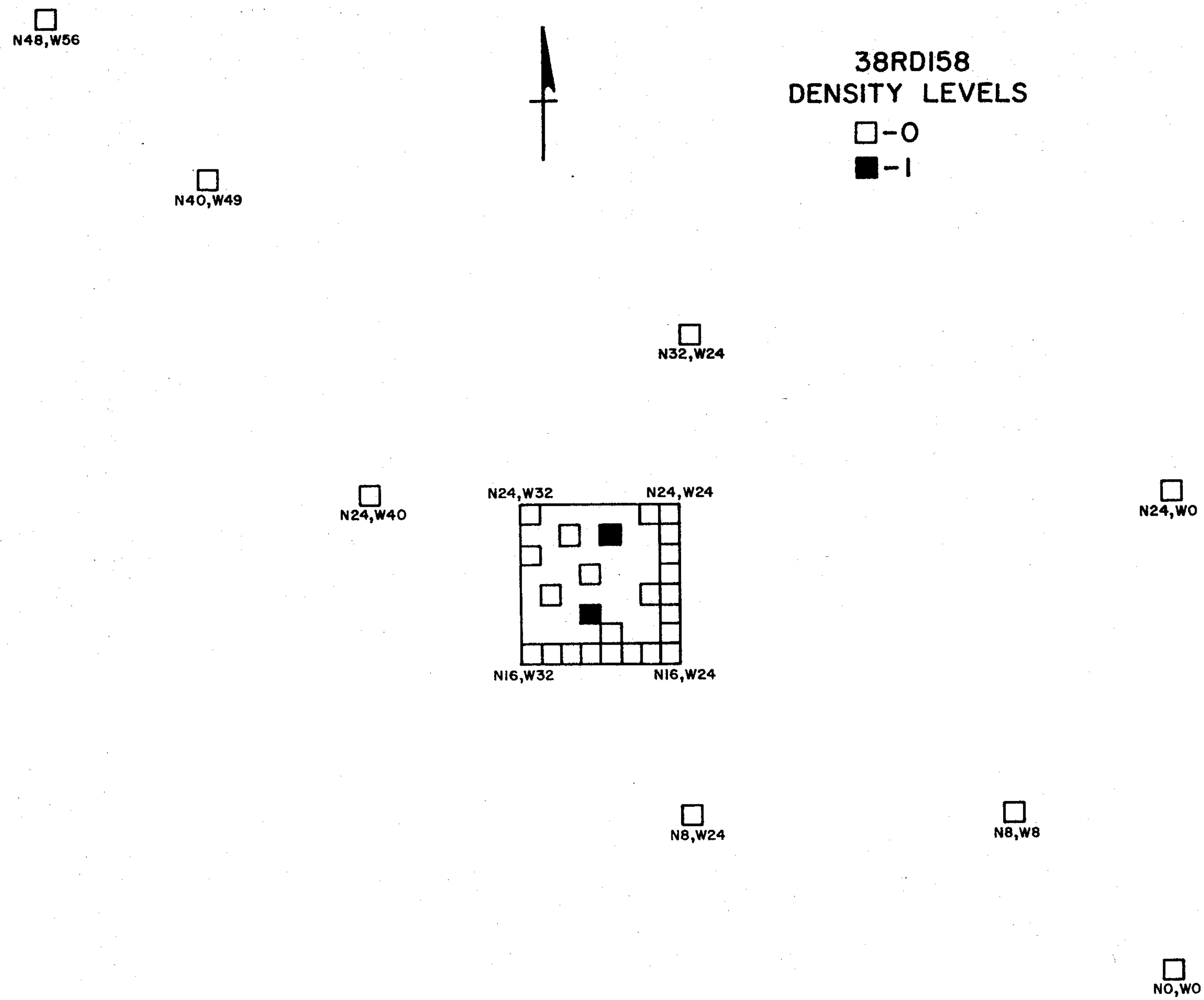



38RD158
DENSITY LEVELS
-0
-1
N48,W56
N40,W49
N32,W24
N24,W40
N24,W32
N24,W24
N16,W32
N16,W24
N24,W0
N8,W24
N8,W8
N0,W0

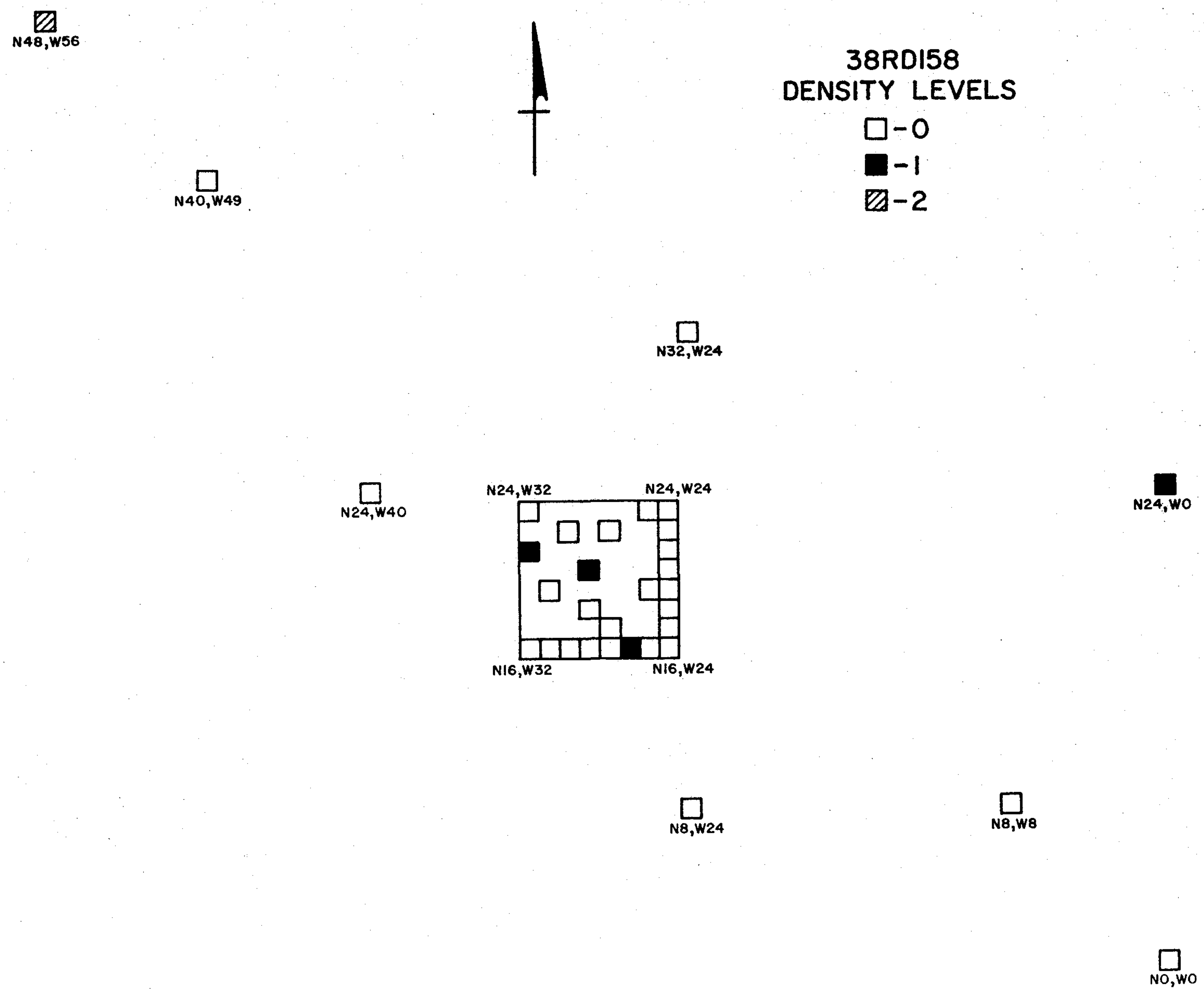
APPENDIX II(d)

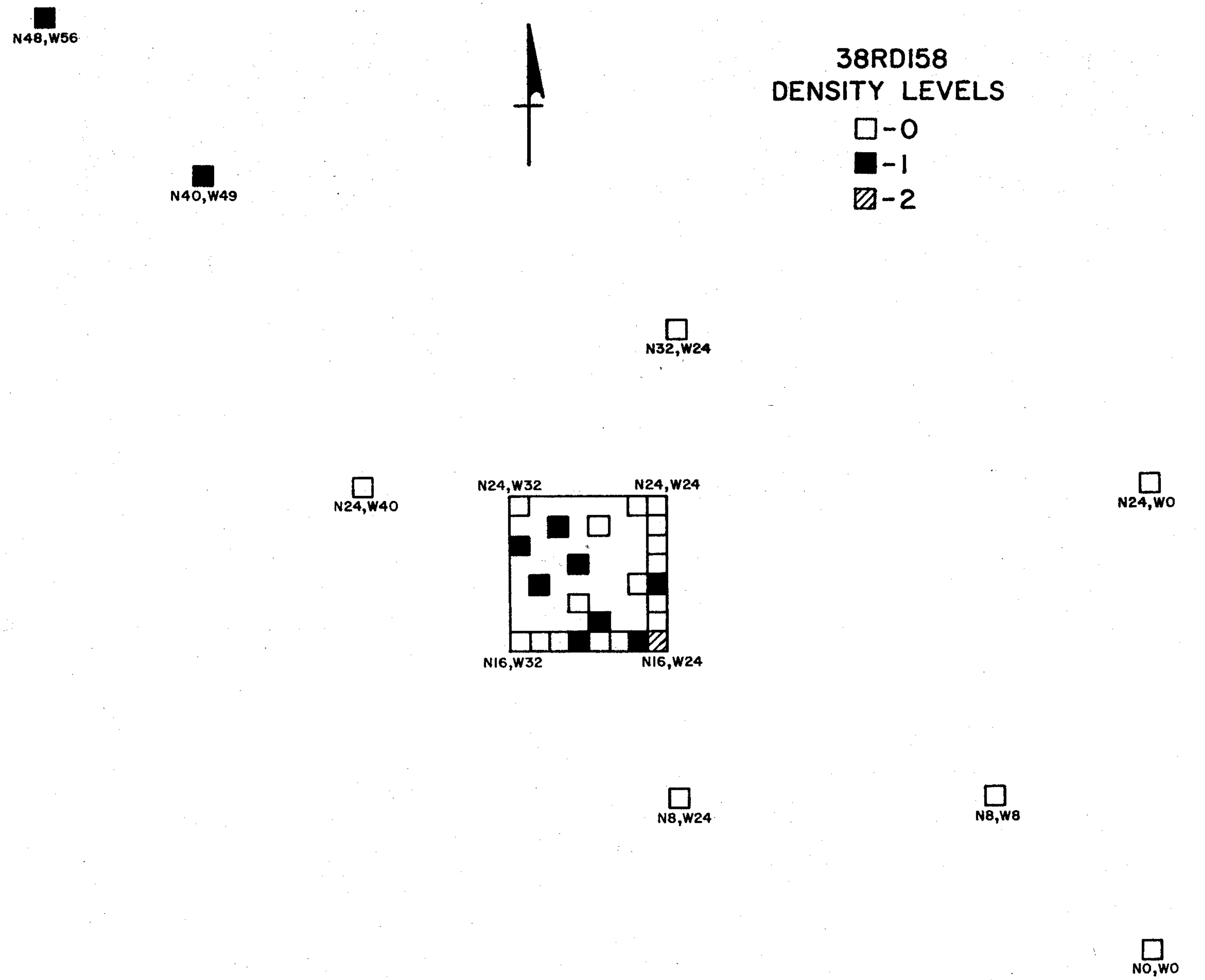


APPENDIX II(e)



APPENDIX II(f)




38RD158
DENSITY LEVELS
-0
-1
-2
N48,W56
N40,W49
N32,W24
N24,W40
N24,W32
N24,W24
N24,W0
N16,W32
N16,W24
N8,W24
N8,W8
N0,W0

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